End-to-end

Build from Scratch

IBM BPM v7.5 Advanced Edition

Part 1 – Building Human Workflows

IBM Business Process Manager V7.5 Education Series

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Lab Introduction

This lab walks you through the experience of building a simple end-to-end BPM solution, comprised of a human workflow and of an advanced integration service.

In Part 1 of this lab, you will be using the Process Designer to create a human workflow and expose an integration service that is meant to be later implemented in Integration Designer.

This first part focuses on the simplicity provided by Process Designer in terms of building, testing, changing, and managing business process definitions.

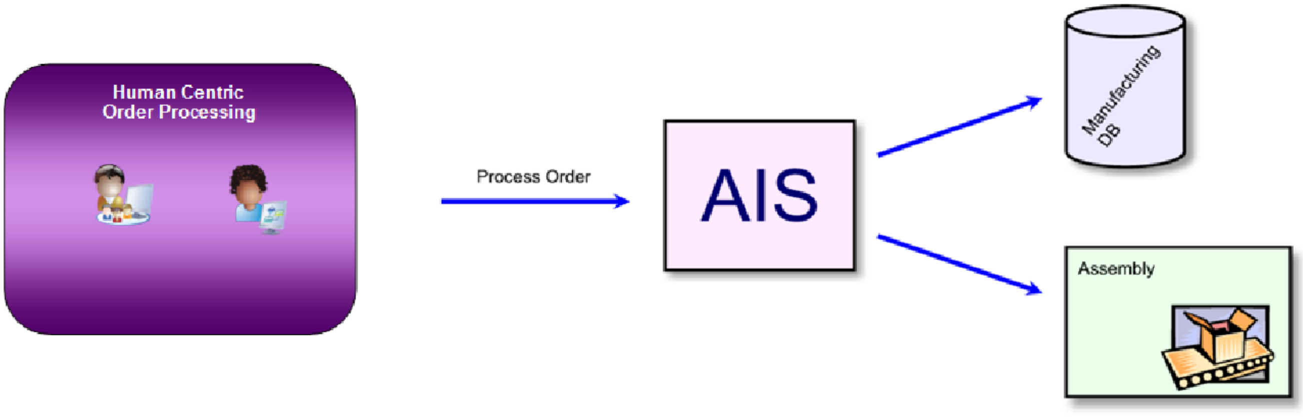
The second part focuses on creating service orchestrations and exploiting connectivity options in Integration Designer.

Business Scenario

We are going to create a simple **order management** solution. Here are some of the requirements that have been given to us by the line-of-business:

1. The order management process is initiated manually by an **Order Taker**, who fills in a request and forwards it to management for approval.
2. An **Order Approver** reviews the request, and can either approve it, or send it back to the Order Taker with comments.
3. If the request is approved, the order moves on to the **fulfillment** phase. This is a totally automated phase that involves recording the order information in a database, and calling services that activate the manufacturing processes.
4. The back-end systems will respond with a success or failure indication, and the Order Taker needs to communicate the results back to the end customer.

In essence, the solution "architecture" could be described as follows:



The previous figure shows that this is a truly composite solution, made of a human centric part, and of an integration centric part (AIS stands for "Advanced Integration Service").

Development Roles and Responsibilities

When developing BPM applications for **IBM Business Process Manager Advanced** there two key roles and skills to consider:

- *Business Author* – responsible for authoring all business processes, including designing and creating the user interfaces that are used for the parts of the process with which people interact.

Business authors also typically make use of services that an *Integration Programmer* has authored, but do not know (or care!) how they work.

- *Integration Programmer* – responsible for doing all of the integration work necessary to support the processes that a *Business Author* is authoring. For example, he will implement all services, and will produce mappings between back-end formats and requirements of current application. Where necessary, he can write code to handle complex interactions with applications or databases.

The first part of the lab will focus only on the role of the *Business Author*. Specifically, we'll see that the *Business Author* responsibilities include:

- Design of the Order Management Process
- Defining the process data
- Defining user interfaces for manual tasks
- Process testing

In the second part of the lab, you deal with the *Integration Programmer's* responsibilities, such as:

- Implement the automated tasks as defined by the *Business Author.* The implementation details are completely up to the *Integration Programmer.*
- Unit test the automated tasks.

Let's get started!

Part 1:Start IBM Business Process Manager and Designer

____ 1. Start the IBM Business Process Manager server

___a. To start Process Center Server, from the desktop click the start shortcut shown below

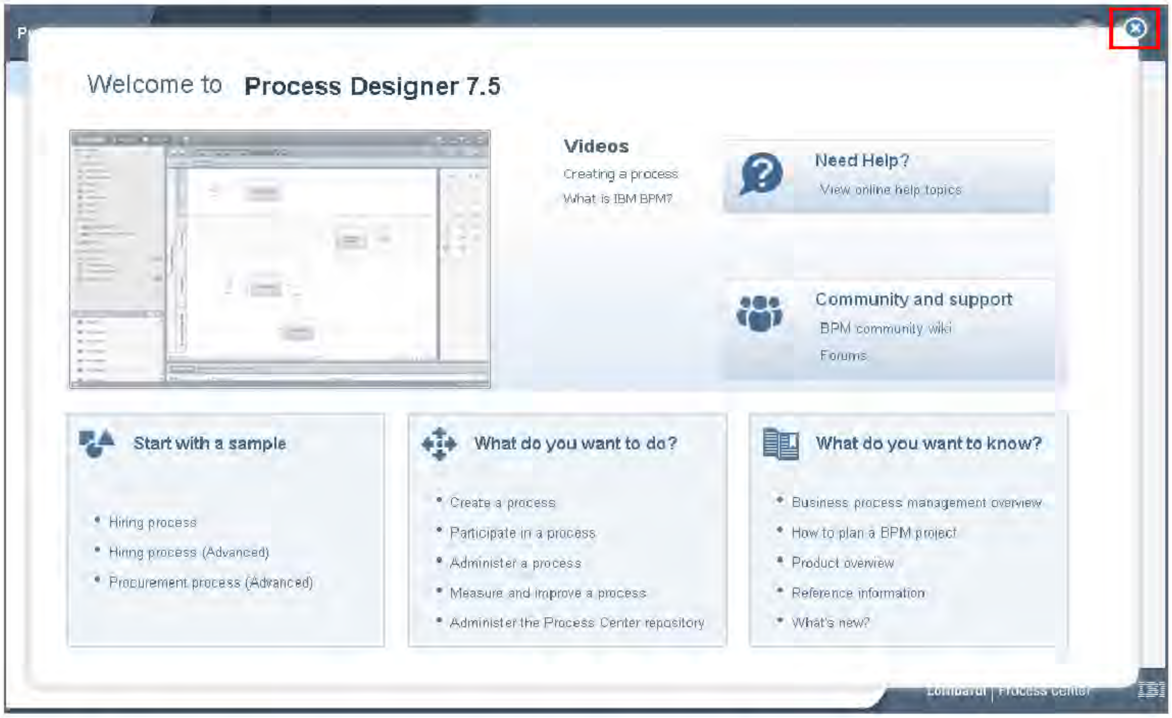
___b. Wait until the DOS Windows closes.

____ 2. Launch IBM Business Process Designer

___a. From the desktop click **Start > IBM Process Designer 7.5**

___b. Enter **admin** for User Name, **admin** for Password, and click **Login**.

___c. If this is the first time that the IBM Process Designer has been started on the computer, the Getting Started window will be shown, providing links to samples, tutorials, videos and other information to get you started quickly. **Close the Getting Started window by clicking the 'X' in the top-right corner.**



When the Getting Started window closes, you will see the list of process applications that are available within the Process Center.

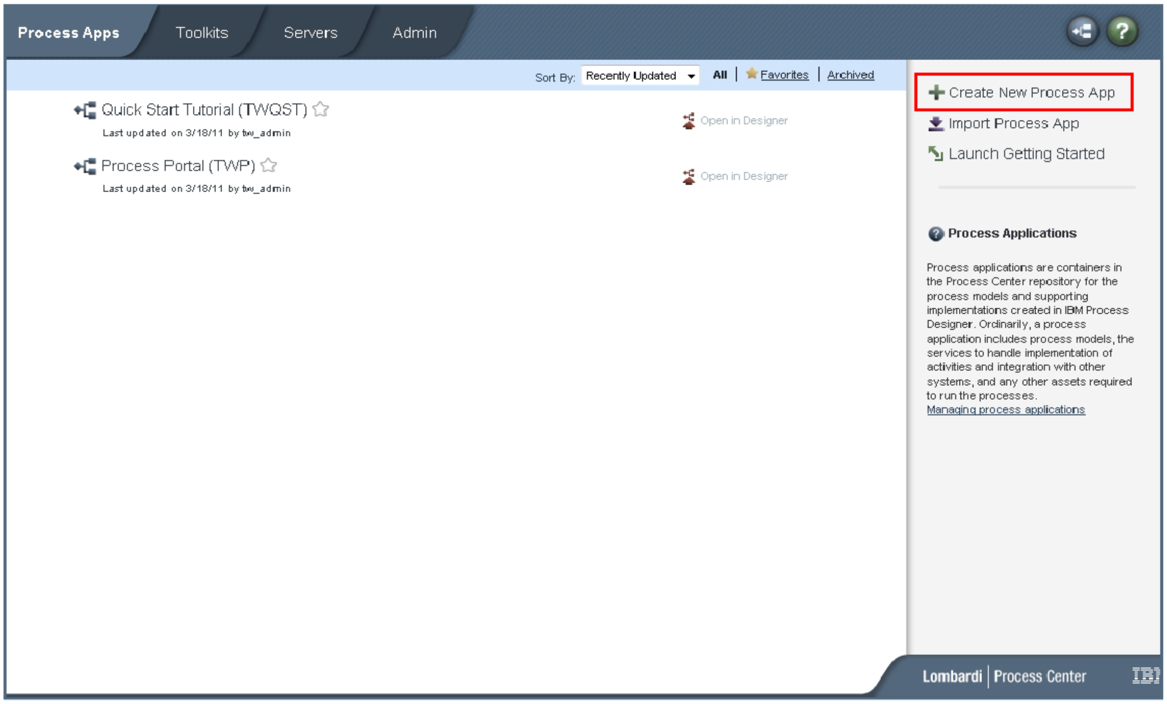
Part 2: Create the First Executable Version of the Process

In this section you will create the first executable model of the Insurance Claim Processing process. A fundamental benefit of IBM Business Process Manager is that the process is always executable. This means that at any time you can hit "play" to run the process, allowing you to iteratively uncover requirements and validate the implementation

The main point of this section is that you create an executing process very quickly. Subsequent sections allow you to refine and extend your process, specifying more details as you progress.

____ 1. Create a new process application

___a. Click Create New Process App



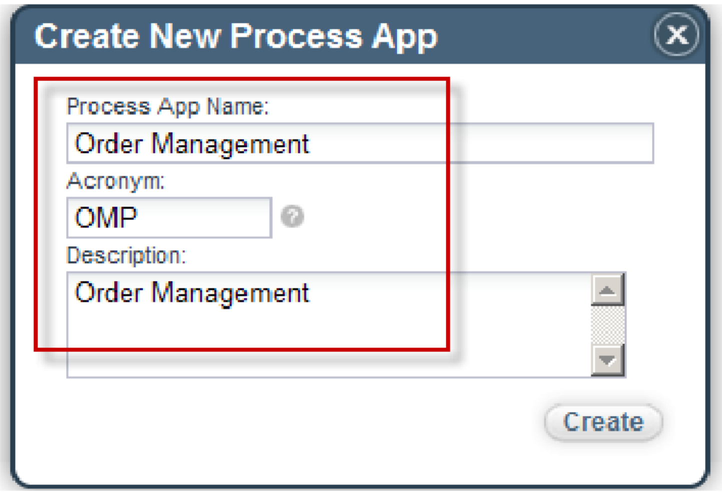
Process applications are containers in the Process Center repository for the process models and supporting implementations created in IBM Process Designer. Ordinarily, a process application includes process models, the services to handle implementation of activities and integration with other systems, and any other assets required to run the processes.

_____ 2. In the Create New Process App wizard, enter the following

___a. Set Process App Name to **Order Management**

___b. Set Acronym to **OMP**

___c. Click **Create**



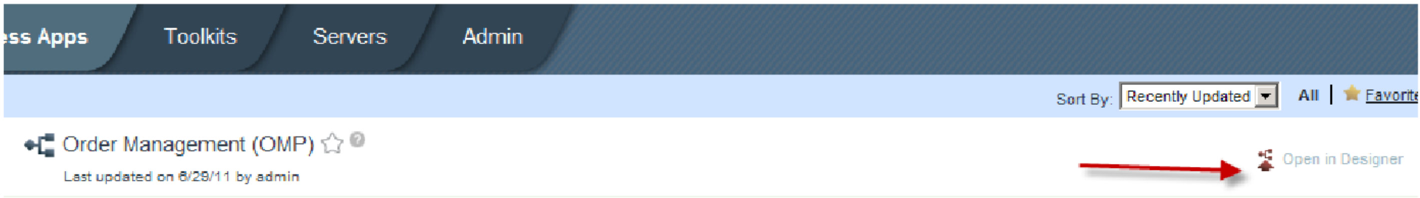
Process App Name: Order Management
Acronym: OMP
Description: Order Management

Process Acronyms

The acronym for a process application must be unique and is limited to seven characters (you are prevented from entering invalid characters). Advanced process authors can use the acronym as a unique identifier to distinguish reusable assets that share a common name

_____ 3. Open the Order Management process application

___a. In the Process Center, find the process application and click **Open in Designer**



Sort By: Recently Updated

Order Management (OMP)
Last updated on 6/29/11 by admin

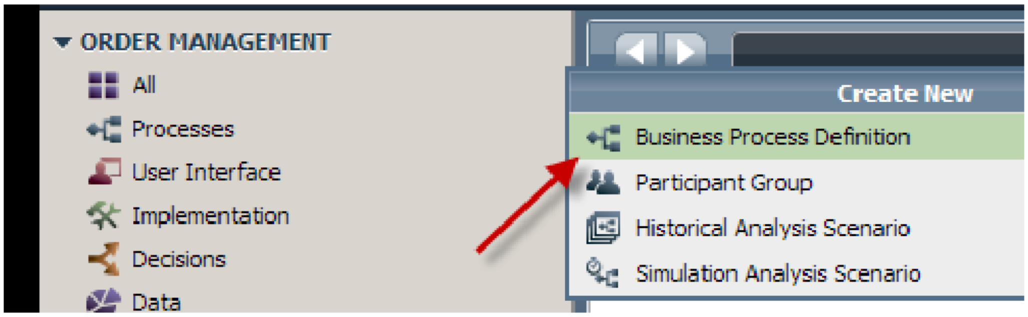
Part 3: Create the Business Process Definition

In this section, you will create a basic Insurance Claim Processing process with just a couple of activities. To model a process, you must first create a Business Process Definition (BPD). A BPD is a reusable model of a process, defining what is common to all run-time instances of that process model.

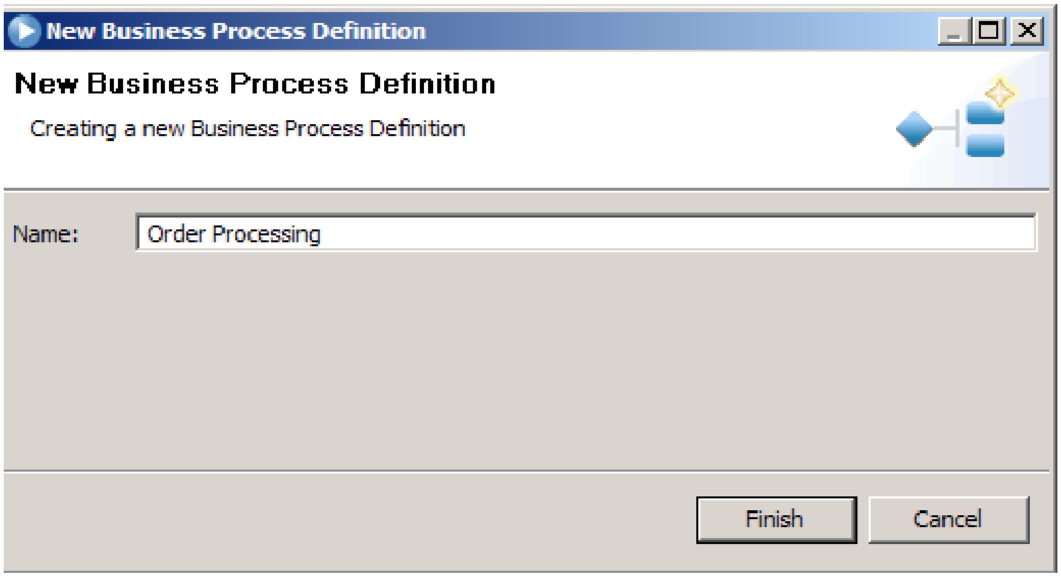
____ 1. Create a BPD named Order Processing

___a. From the process library, hover over **Processes** and select the plus (+) icon

___b. In the Create New wizard, select Business Process Definition



___c. Set the **Name** to **Order Processing**



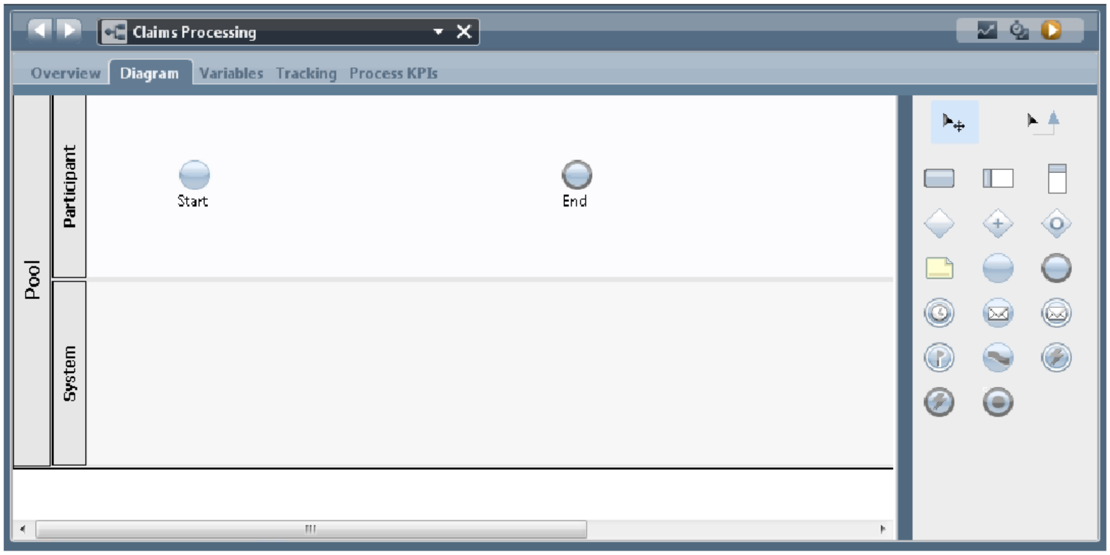
New Business Process Definition

New Business Process Definition

Creating a new Business Process Definition

Name: Order Processing

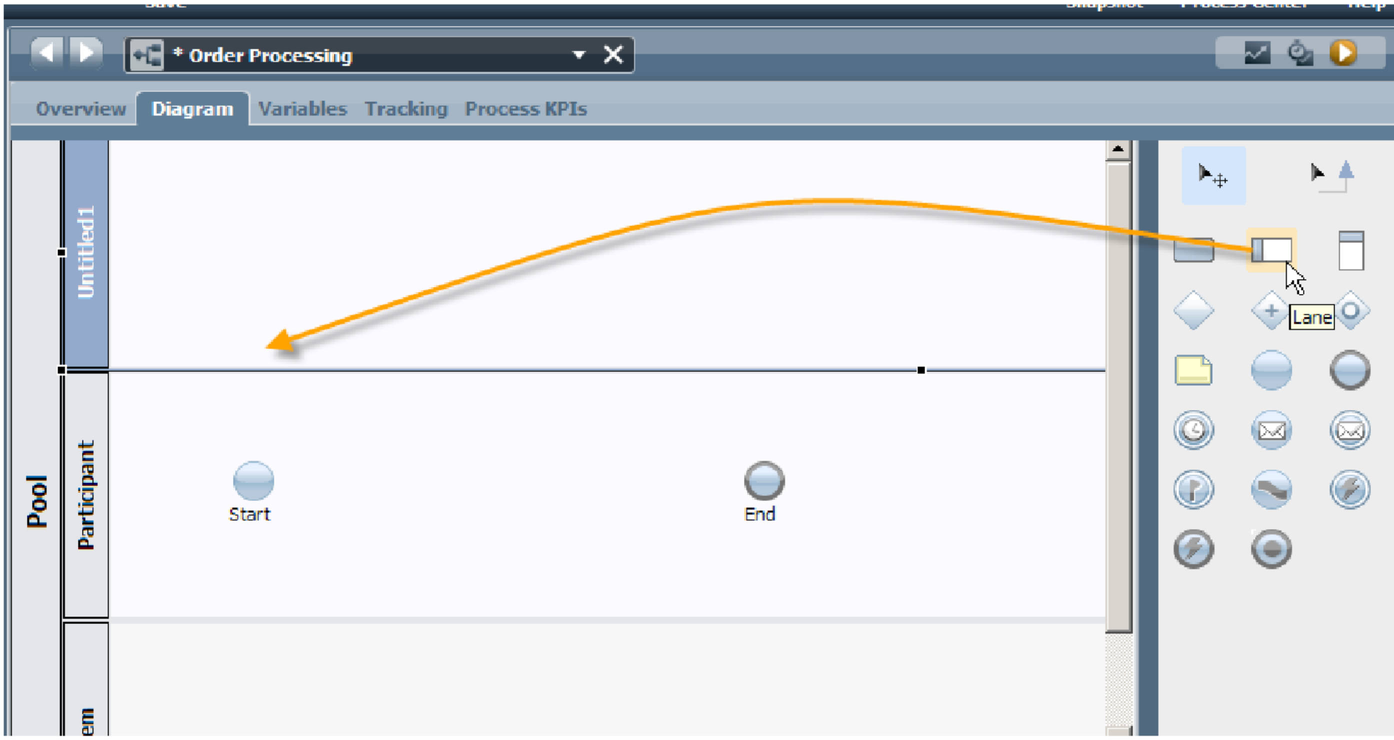
___d. Click **Finish**



By default you get a process with two swimlanes, a Start Event and an End Event. The **Participant** swimlane is by default associated with human users, while the **System** swimlane is meant to contain automatic activities performed by computing systems. In the next section, we are going to add another swimlane to represent different roles in the process.

____ 2. Create an additional swimlane and the initial process activities

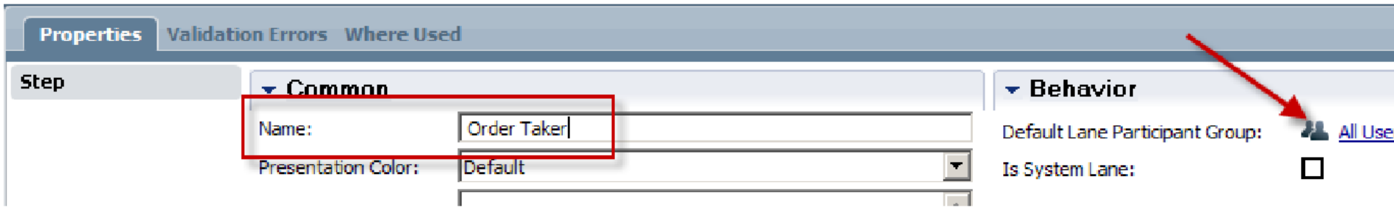
___a. From the palette, drag and drop a new **Lane** onto the canvas:



___b.

___c. Make sure that the new **Untitled1** lane is selected, and click on the **Properties** tab in the lower pane. Change the name to **Order Taker**. Notice that the lane is associated with **All Users** (we could associate it to a specific role, but for the purpose of this exercise, we are going to assign it to everyone on the system):

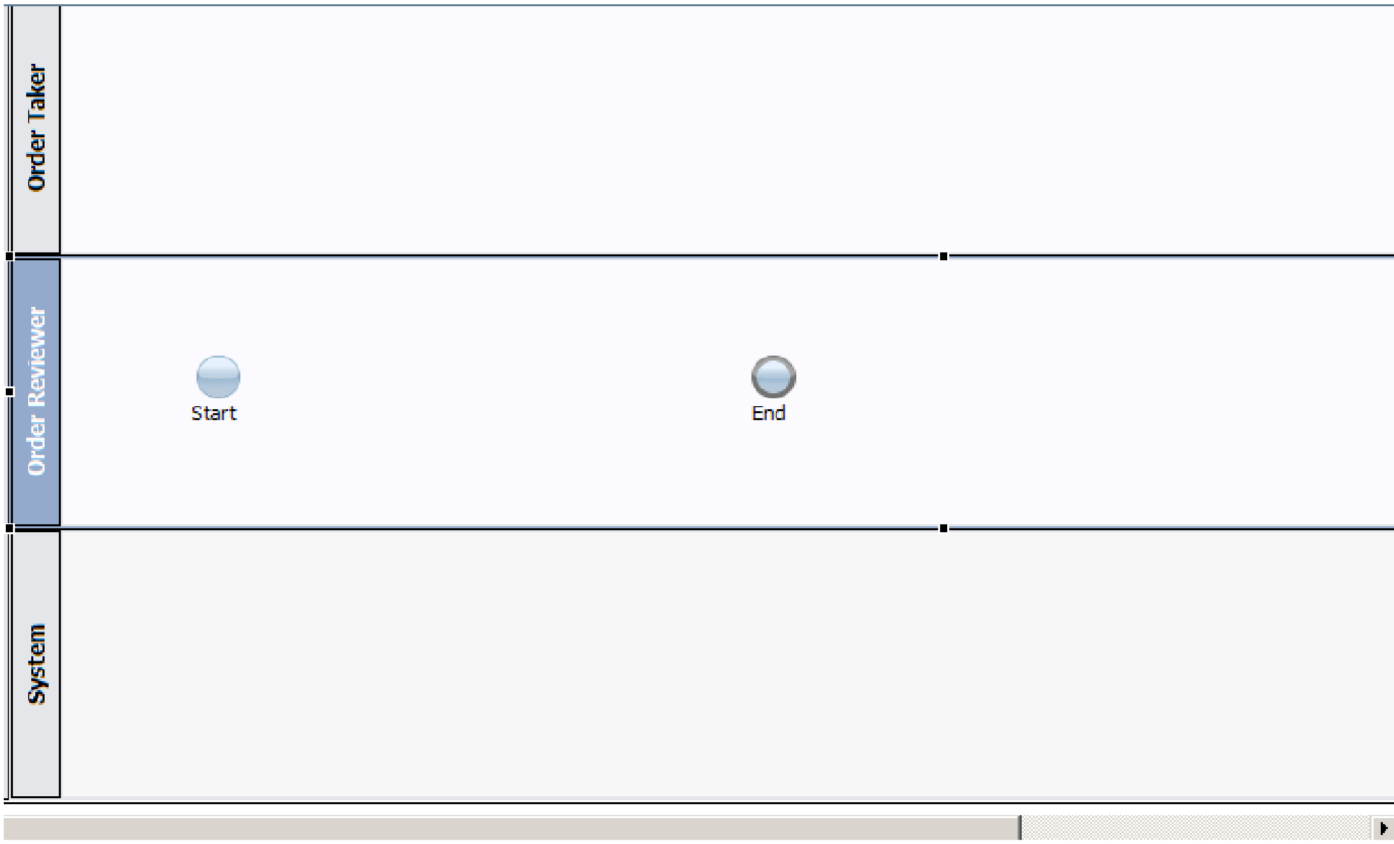
___d.



Name: Order Taker

Presentation Color: Default

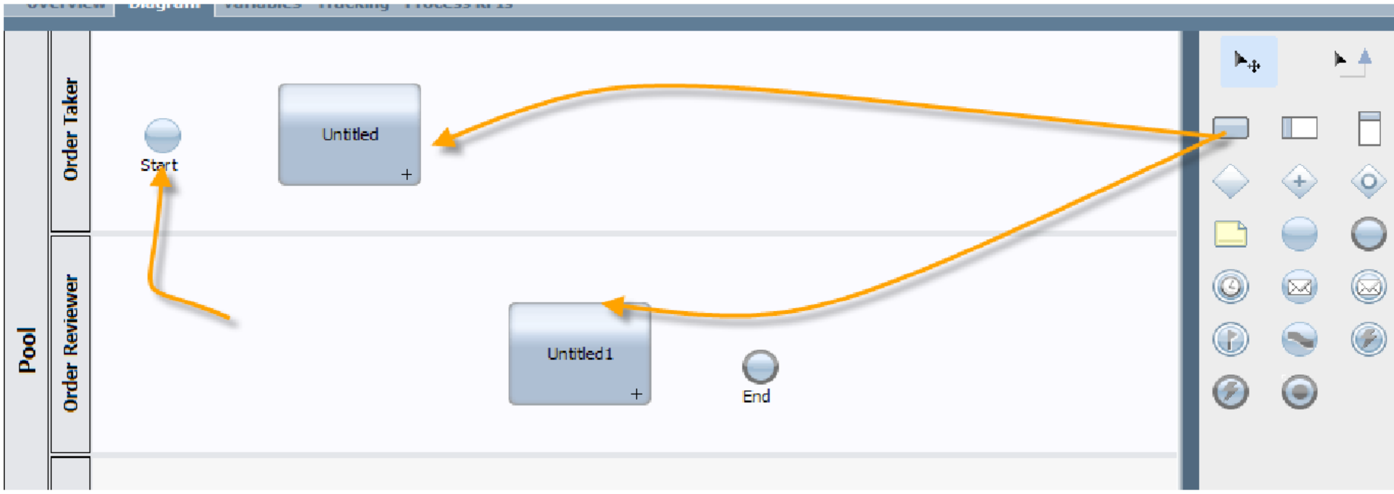
___e. Click on the **Participant** lane and change its name to **Order Reviewer**. Your canvas should now look as follows:



___f.

___g. Moce the **Start** node to the **Order Taker** lane. Then, drag and drop an activity from the palette onto the **Order Taker** lane, and one other activity onto the **Order Reviewer** lane, as shown below:

___h.



____ 3. Set the properties of the two activities

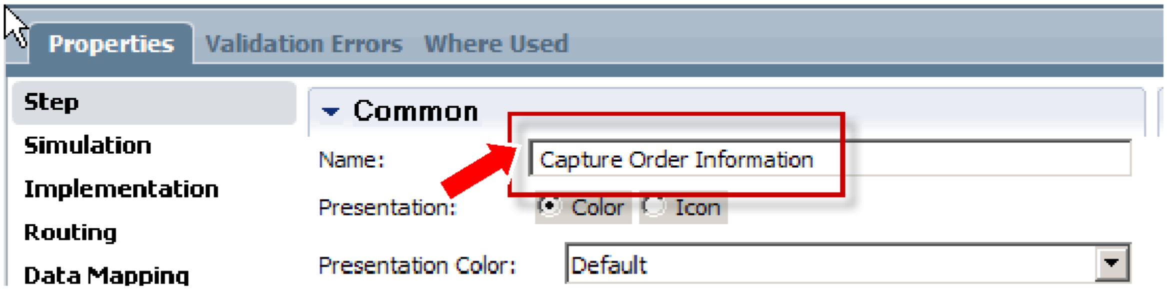
In Process Designer, when you select a component on the diagram, the properties of that component are displayed in the bottom portion of the screen. We will now rename the two activities to something more meaningful.

___a. Click on the first activity

___b. Click on the **Properties** tab below the diagram area

___c. Click on the **Step** sub-tab

Under **Common**, set the Name to **Capture Order Information**



Name: Capture Order Information

Presentation: ● Color ○ Icon

Presentation Color: Default

___d. Select the second activity and follow similar steps to rename the second activity to **Review Order.**

____ 4. Wire the components together

In Process Designer, drawing lines is a bit different: instead of using click-drag-release to draw a line, you simply click twice – once to start the line, and a second time to end the line.

___a. Click the **Sequence Flow** icon in the palette on the right-hand side

Selection Tool

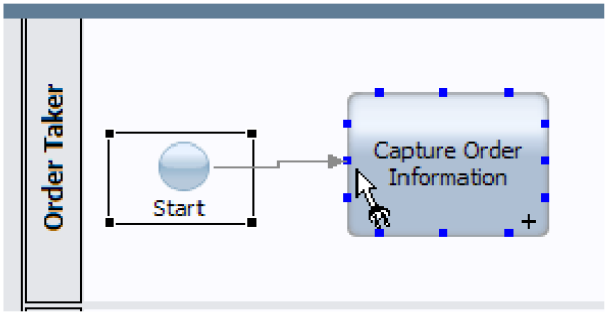
The Selection Tool enables you to select and move components on the diagram

Sequence Flow Tool

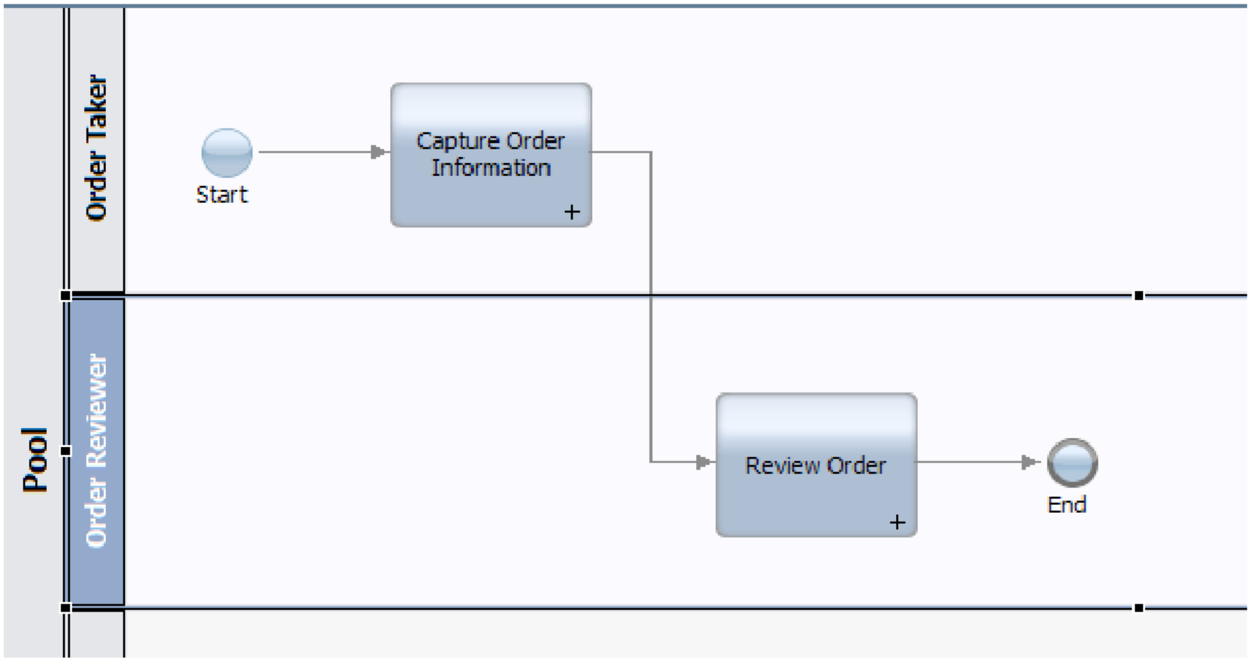
The Sequence Flow Tool enables you to connect process components to establish the order in which the steps in the process occur.

___b. Click once on the **Start Event**. Note: The closest blue dot to your click is used – you do NOT have to click directly on the blue dot.

___c. Move your mouse over **Capture Order Information** and click a second time



___d. Now repeat similar steps to wire **Capture Order Information** to **Review Order** and **Review Order** to the **End Event**



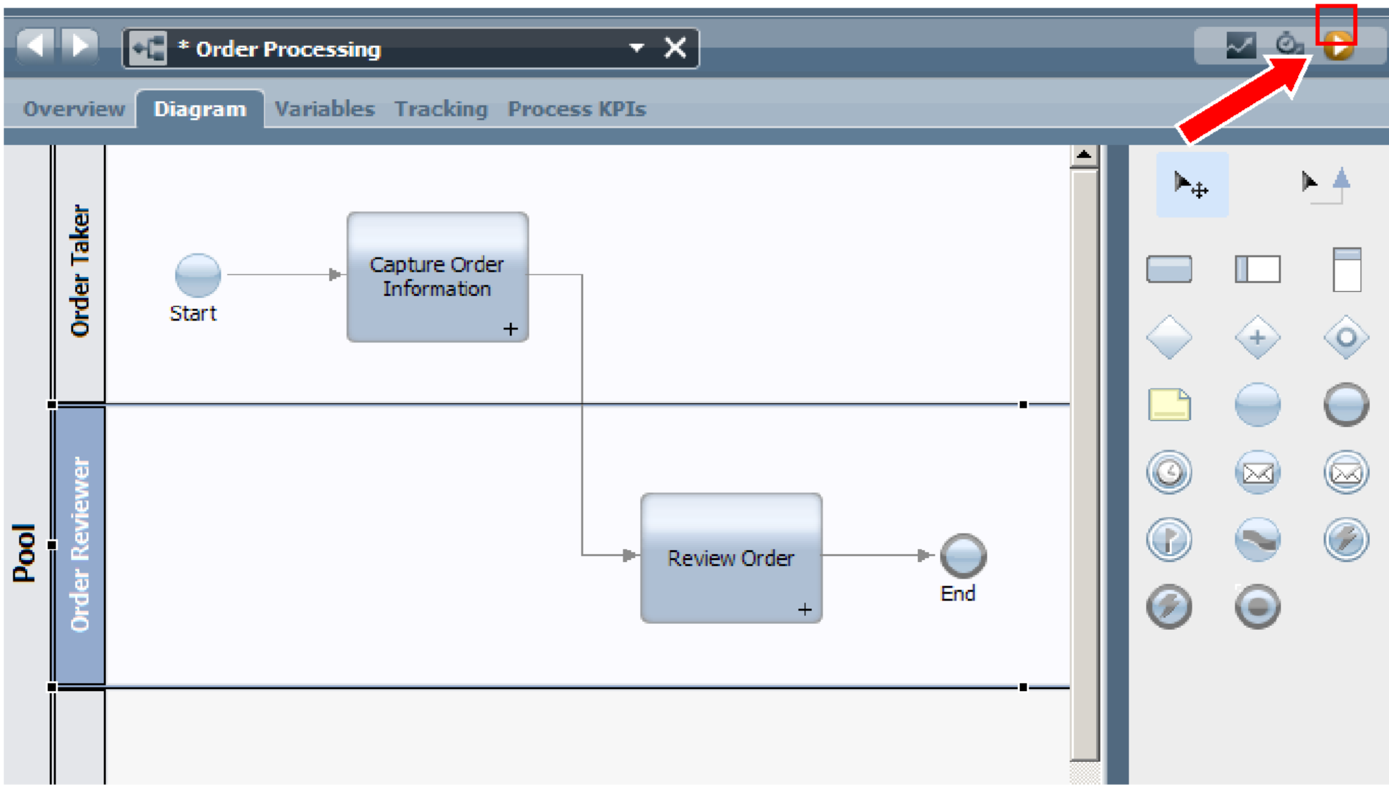
Tip: Aligning components of a BPD

To line up activities and straighten sequence flow lines, click on the component(s) you want to move and use [CTRL + arrow keys] to 'nudge' them into position.

Part 4: Run the Process

In Process Designer, the diagram is the process. Therefore, right away we can already run this basic process we have diagrammed.

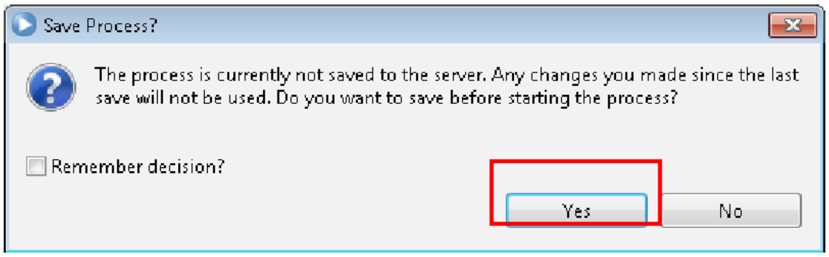
____ 1. **Run the process by clicking the Run Process button**



____ 2. **Save the process**

When you tried to run the process without saving the changes, Process Designer warns you that you have unsaved changes.

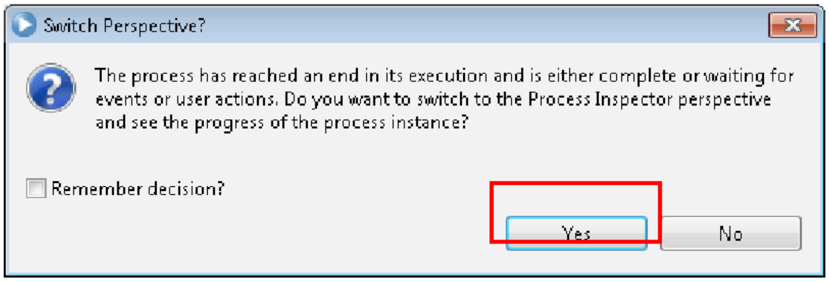
___a. At the **Save Process?** Prompt, click **Yes**


Save Process?

The process is currently not saved to the server. Any changes you made since the last save will not be used. Do you want to save before starting the process?

☐ Remember decision?

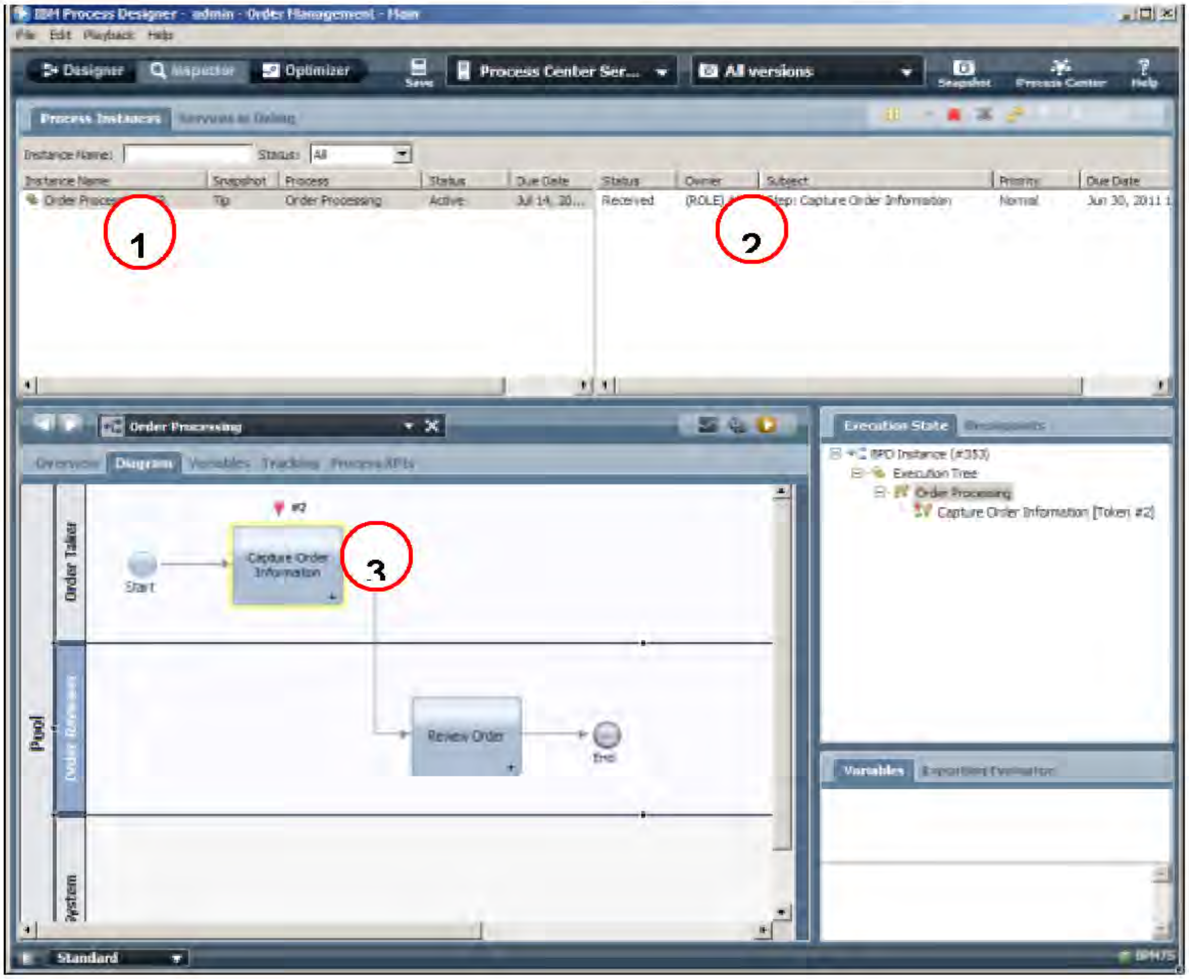
____**b.** If you get a prompt to **Switch Perspective?**, click **Yes**. The reason for the prompt is that the process has reached a point where it needs some human interaction.



The process has reached an end in its execution and is either complete or waiting for events or user actions. Do you want to switch to the Process Inspector perspective and see the progress of the process instance?

☐ Remember decision?

____ 3. The Process Inspector provides a testing and debugging environment

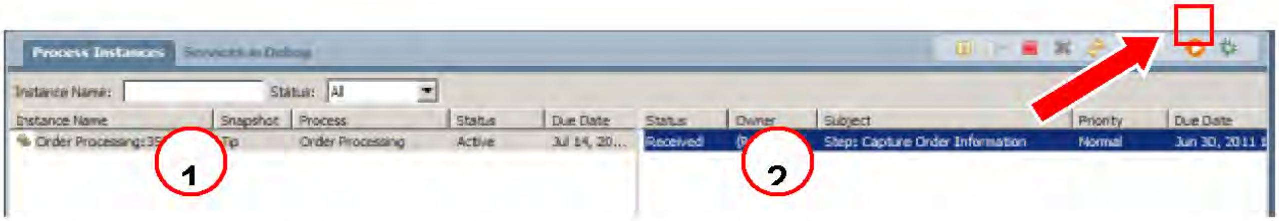


Section	Description
1	Shows that you have one process instance running
2	Shows that there is a task associated with the process instance currently selected in (1)
3	The diagram is annotated to indicate what step(s) are currently running in the process

____ 4. Run the first task

___a. Click the process instance in **(1)** ___**b.** Click the highlighted task in **(2)**

___**c.** Click the Run button at the top right. (This button will be disabled unless a task is selected in (2))

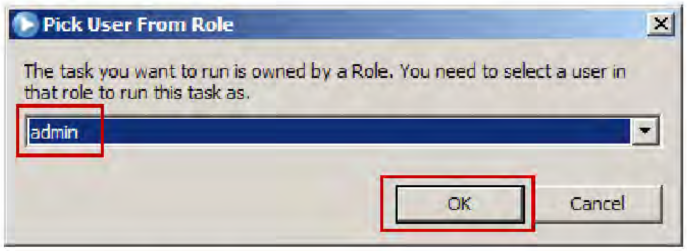


Instance Name:
Status: All

Instance Name	Snapshot	Process	Status	Due Date
Order Processing:35	Tip	Order Processing	Active	Jul 14, 20...

Status	Owner	Subject	Priority	Due Date
Received	(R	Step: Capture Order Information	Normal	Jun 30, 2011 1

___**d.** At the **Pick User from Role** prompt, accept **admin** and click **OK**.

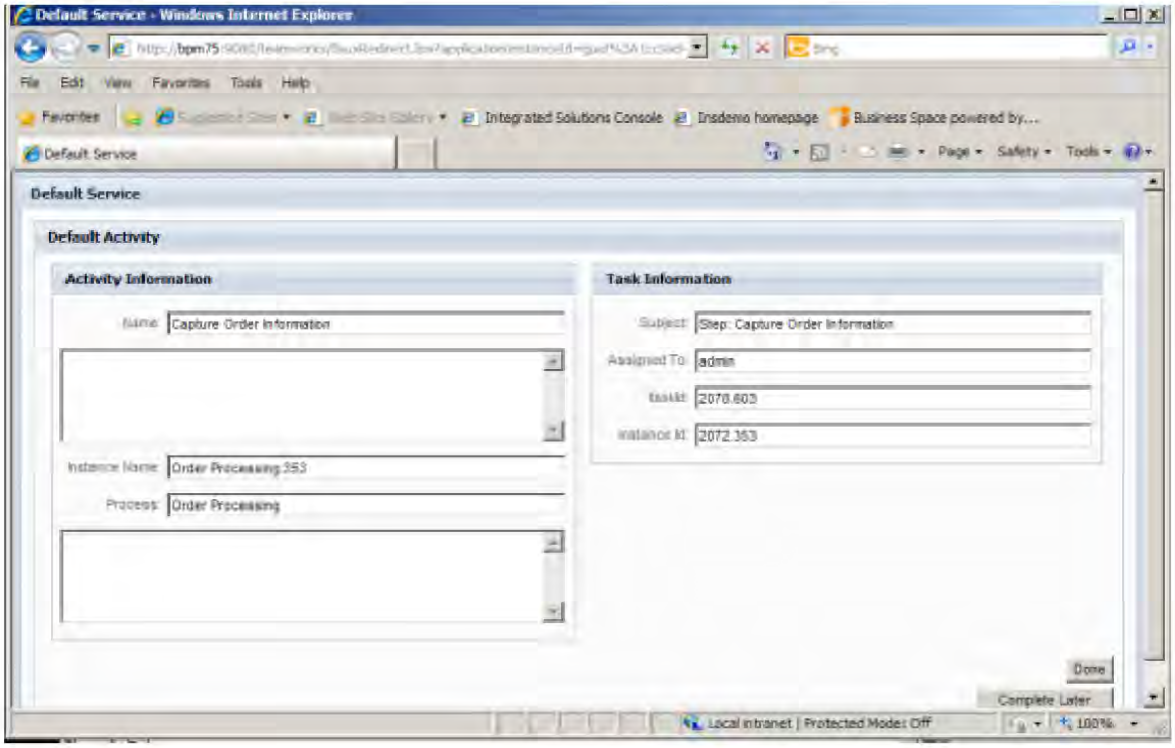


The task you want to run is owned by a Role. You need to select a user in that role to run this task as.

admin

____ 5. Complete the form associated with the task

A browser window will open up with a default screen even though we have not implemented any business data, specific screens, etc. The default screen shows information about the process instance and the task. To complete this task, click **Done**.


Default Service - Windows Internet Explorer
File
Edit
View
Favorites
Tools
Help
Favorites
Integrated Solutions Console
Insdemo homepage
Business Space powered by...
Default Service
Page
Safety
Tools
Done
Complete Later
Local intranet | Protected Mode: Off
100%

Default Service

Default Activity

Activity Information

Name: Capture Order Information

Instance Name: Order Processing:353

Process: Order Processing

Task Information

Subject: Step: Capture Order Information

Assigned To: admin

taskId: 2078.603

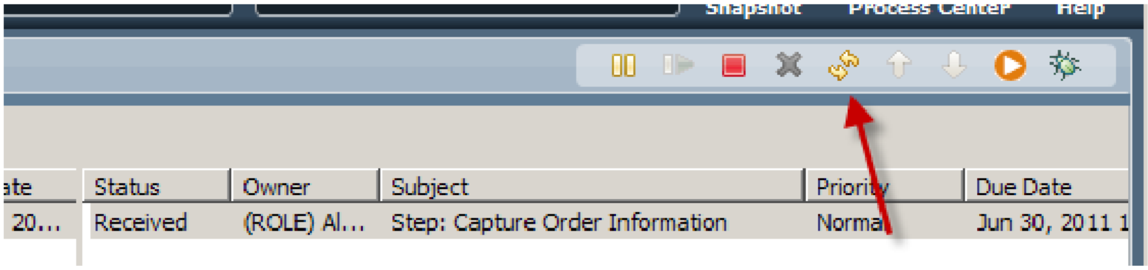
instance Id: 2072.353

You will see a message that the service has finished: **The service has finished**

____**a.** Click **Yes** to close the browser

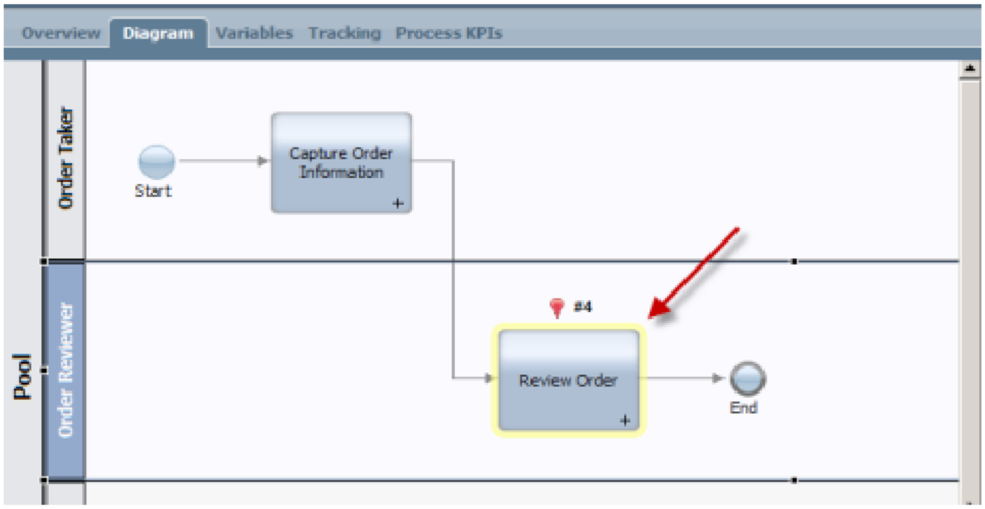
_____ 6. Refresh the process diagram to reflect the latest status

____**a.** Back in the process inspector, click the Refresh icon (in the upper right above the list of tasks) to see where your process has advanced.



ate	Status	Owner	Subject	Priority	Due Date
20...	Received	(ROLE) Al...	Step: Capture Order Information	Norma	Jun 30, 2011 1

___b. You can see in the diagram view that the process has now moved on to **Review Order**.



Takeaway from this Section

Just by drawing the picture, the process is executable. Even without specifying any implementation for the activities, you can step through the process from beginning to end.

In the next section you will see how the Process Portal web environment can also be used to run the process. Specifically, you will use the Process Portal to complete the remaining activity in the process instance that you started from the Process Designer.

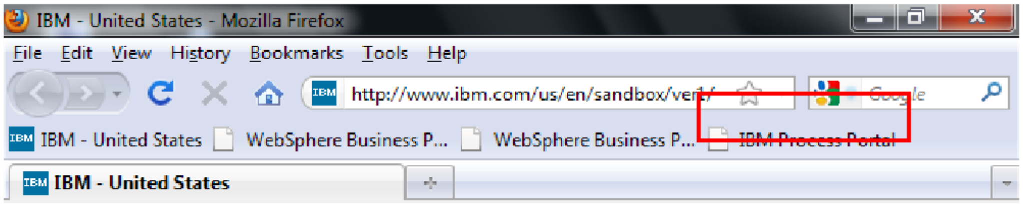
Part 5: Run the Process From the Process Portal

In this section, you will run the basic process you diagrammed in the earlier section in the Process Portal. The Process Portal provides a web interface that enables process participants to perform assigned tasks, view the history of tasks, and view the performance of their processes and teams. Using Process Portal, process participants can connect to the Process Center Server or a Process Server in any configured runtime environment, such as test or production environments

____ 1. Launch the Process Portal

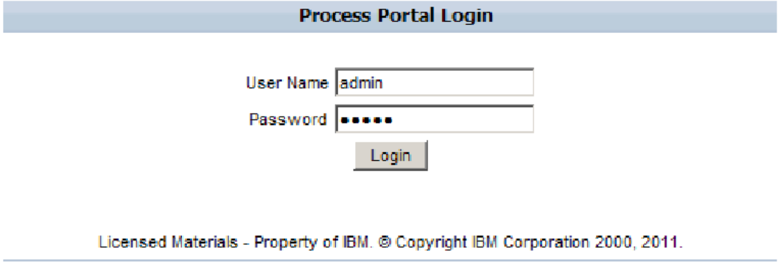
___a. Open a **Firefox** web browser from the Windows Taskbar bar

___b. When Firefox starts, select the **IBM Process Portal** link from the toolbar.



____ 2. Login to the Process Portal

___a. Enter Username: **admin** and Password: **admin,** and then click **Login**



User Name: admin

Password: •••••

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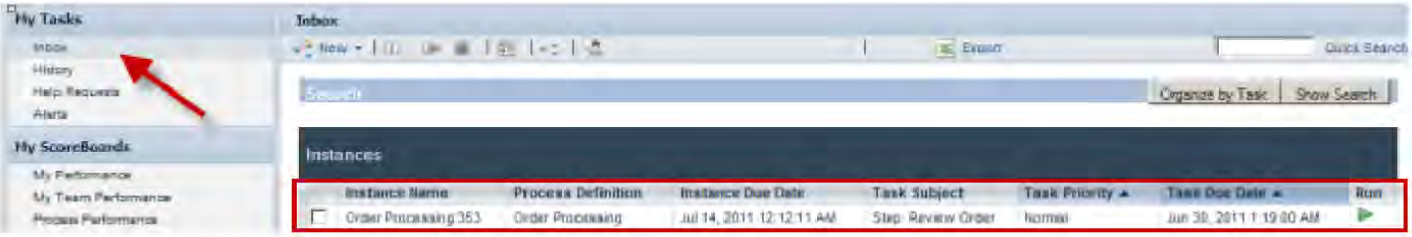
____ 3. Select the task to be completed

When you login to the Process Portal, you will see a view of **admin's** inbox. At the end of the last section of this lab, there was still one activity left to complete in the process instance that was started from the Process Designer. You should see one row in the Instance table, representing the single task that is left to complete in order to finish the previously started process instance



	Instance Name	Process Definition	Instance Due Date	Task Subject	Task Priority ▲	Task Due Date ▲	Run
☐	Order Processing:353	Order Processing	Jul 14, 2011 12:12:11 AM	Step: Review Order	Normal	Jun 30, 2011 1:19:00 AM	▶

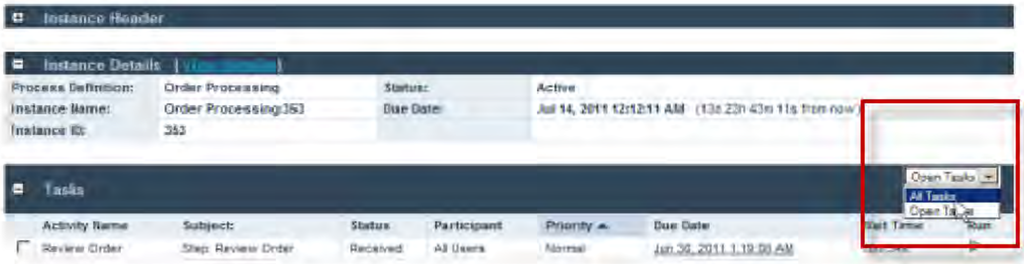
___a. Click on the text in the **Instance Name** column to see the details of the outstanding task

Tip: Process Portal

While the out-of-the-box portal can be used to display work lists and allow users to execute these work items, many customers choose to use their existing Portal for this purpose instead.

____ 4. Complete the outstanding task

___a. From the task details, select **All Tasks** so that you can see all tasks, not just the open tasks.

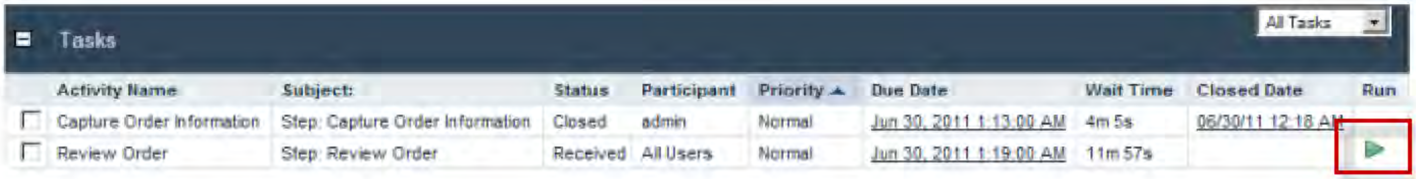


Process Definition:	Order Processing	Status:	Active
Instance Name:	Order Processing:353	Due Date:	Jul 14, 2011 12:12:11 AM (13d 23h 43m 11s from now)
Instance ID:	353		

	Activity Name	Subject:	Status	Participant	Priority ▲	Due Date	Wait Time	Run
☐	Review Order	Step: Review Order	Received	All Users	Normal	Jun 30, 2011 1:19:00 AM		

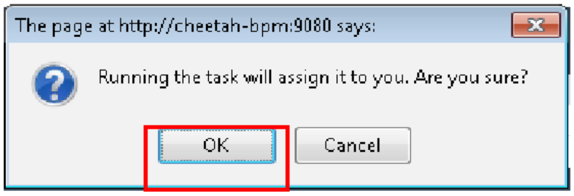
___b. With **All Tasks** selected, you can see that there are two tasks associated with this process instance. One task was already completed (the one you completed from the Process Inspector), and one open task remains.

___c. Execute the task by clicking **Run** (▶) on the open task. (You may need to refresh your browser for the **Run** button to appear.)



	Activity Name	Subject:	Status	Participant	Priority ▲	Due Date	Wait Time	Closed Date	Run
☐	Capture Order Information	Step: Capture Order Information	Closed	admin	Normal	Jun 30, 2011 1:13:00 AM	4m 5s	06/30/11 12:18 AM	
☐	Review Order	Step: Review Order	Received	All Users	Normal	Jun 30, 2011 1:19:00 AM	11m 57s		▶

___d. At the Task Assignment prompt, click **OK**.

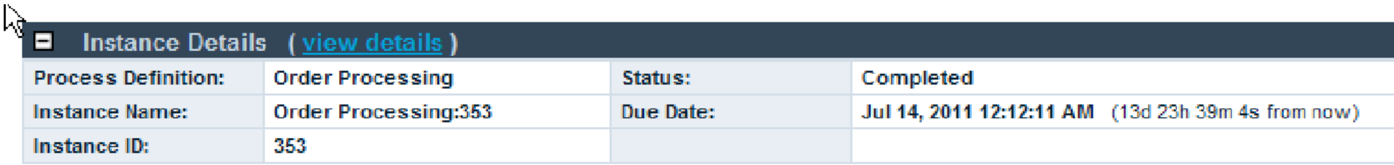

The page at http://cheetah-bpm:9080 says:

Running the task will assign it to you. Are you sure?

___e. The default screen will open in a browser, just as it did earlier when you completed the task from the Inspector view. Click **Done** to complete the task.

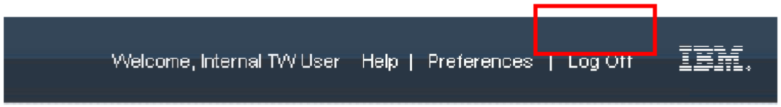
___f. Refresh the browser.

___g. The process is now in the **Completed** state


Instance Details (view details)

Process Definition:	Order Processing	Status:	Completed
Instance Name:	Order Processing:353	Due Date:	Jul 14, 2011 12:12:11 AM (13d 23h 39m 4s from now)
Instance ID:	353		

___h. Log off from the Process Portal and close the browser

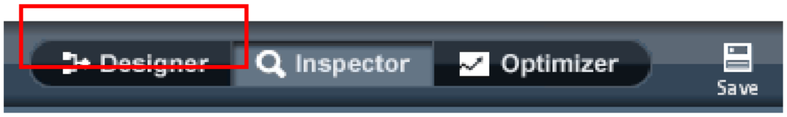


Takeaway from this section

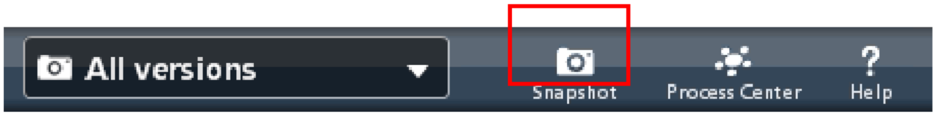
The main point for showing the Process Portal is to validate that the process runs from the very beginning. Everything we do now in the Process Designer will be to add more to the process until it does the right thing. This is the fundamental difference in IBM Business Process Manager as to how the customer approaches projects. The process runs from the beginning and it becomes much more of a business decision as to when the process does enough of the right things to be valuable.

_____ 5. Create a snapshot of the process

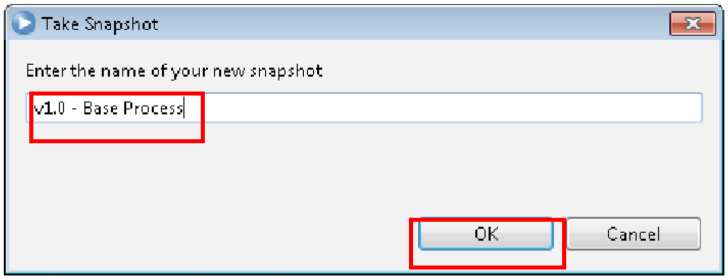
___a. In Process Designer, switch back to the **Designer** perspective by clicking the button at the top left of the screen



___b. Click **Snapshot** at the top-right corner of the window



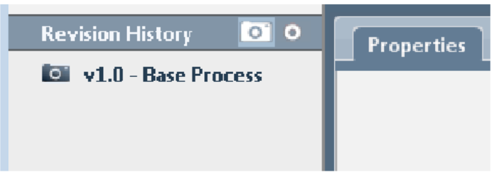
___c. For the snapshot name, enter **v1.0 – Base Process** and click **OK**



Enter the name of your new snapshot

v1.0 - Base Process

___d. Notice the snapshot in the lower-left of the Process Designer window, under **Revision History**



Part 6: Add more Details to the Process

In this section we will add some additional details and steps to the process to make it a bit more realistic. We are going to add a decision gateway, so that if the reviewer approves the order, the order can be sent to the back-end systems for fulfillment. If the reviewer doesn't approve, the order information is going to be sent back to the order taker asking for more details.

____ 1. Add additional elements to the BPD

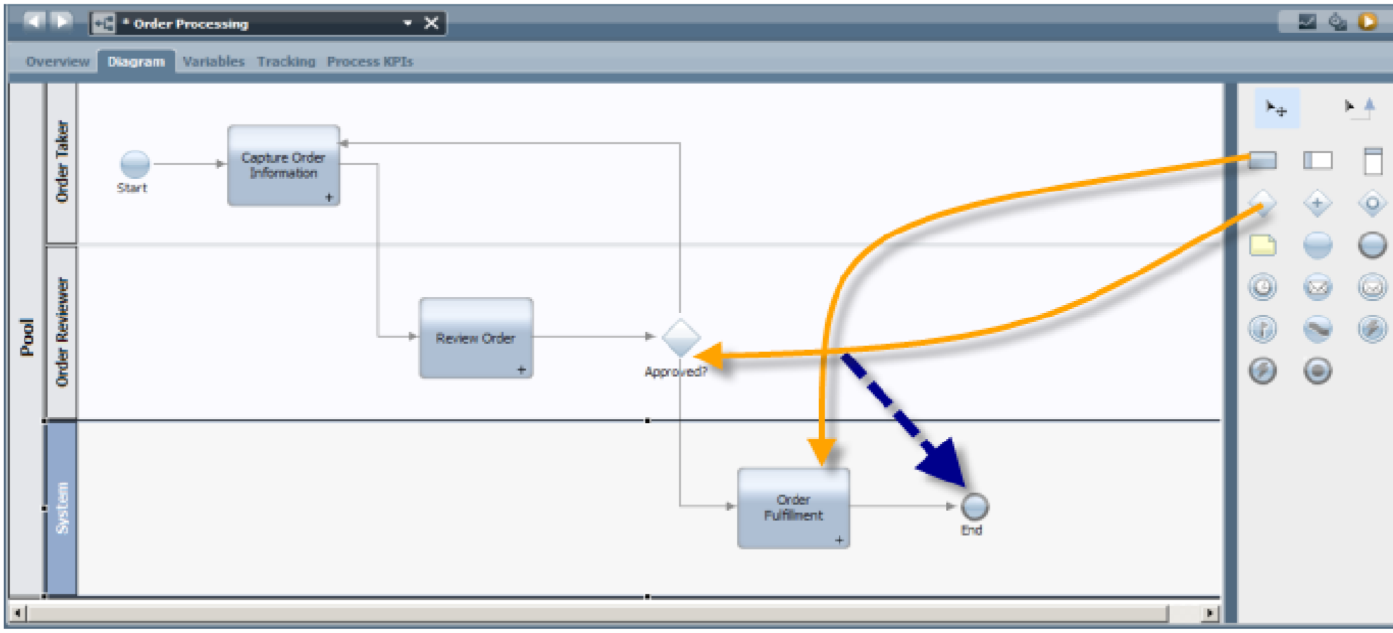
___a. Drag a new activity in the **System** lane.

___b. Drag the **End** node to the right of that activity in the same **System** lane.

___c. Drag a **Decision Gateway** from the palette onto the canvas, in the **Order Reviewer** lane, to the right of the **Review Order** activity.

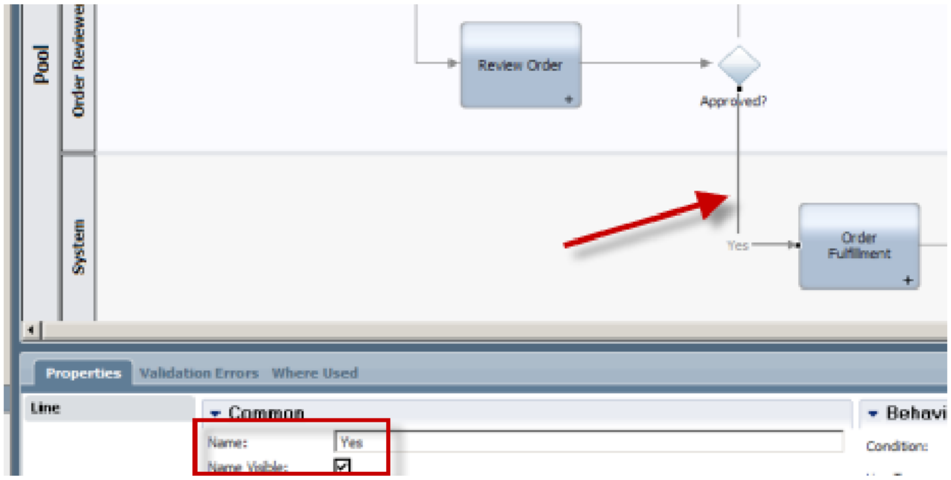
___d. Name the gateway **Approved?** and the new activity **Order Fulfillment.**

___e. Wire them as indicated below:



___f. Click the connection that goes from the decision gateway to the **Order Fulfillment** activity.

___g. In the **Properties** tab (**Line** sub-tab) at the bottom of the screen, change the name of the sequence flow line to **Yes** and check the **Name Visible** checkbox to make the **Yes** label appear on the diagram:



Name: Yes
Name Visible: ☑

___**h.** Repeat the steps above to set the label from **Approved?** back to **Capture Order Information** to **No.**

Takeaway from this section

We’ve now successfully drawn the picture of the process, and because *the picture is the process* in Process Designer, we’re left with something that can be run and played back live to a business audience to confirm requirements and processing steps.

In the following sections, we’ll model the business data that is used in the process and then start to define the detail of the process activities. This will include defining the user interfaces (or “coaches”) that are associated with the human interaction-related activites in the process, as well as specifying the decision gateway expressions to control process flow.

Part 7: Modeling Business Data

We now need to define the business information that is flowing through the Order Processing process. This information represents the **state** of the process instances. We need a variable to keep the order information, and another variable to store the approval decision.

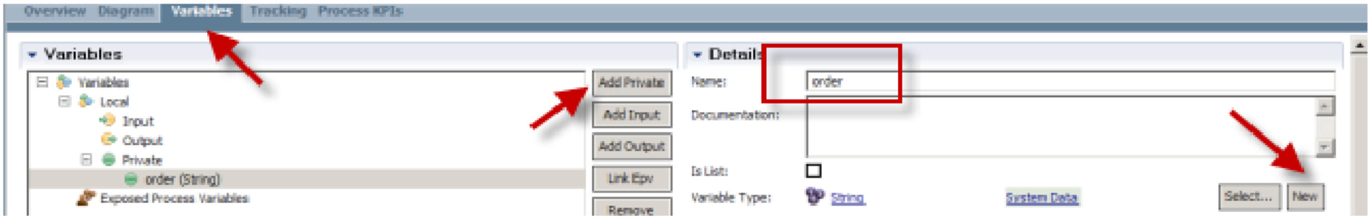
____ 1. Add a private variable to the process

___a. Click on the **Variables** tab near the top of the screen. The content of this tab shows the data that is available for use in the process, broken up into **inputs**, **outputs**, and **private variables.**

___b. Then, click **Add Private** and name the variable **order.**

___c. Finally, click on the **New** button by **Variable Type:**

___d.

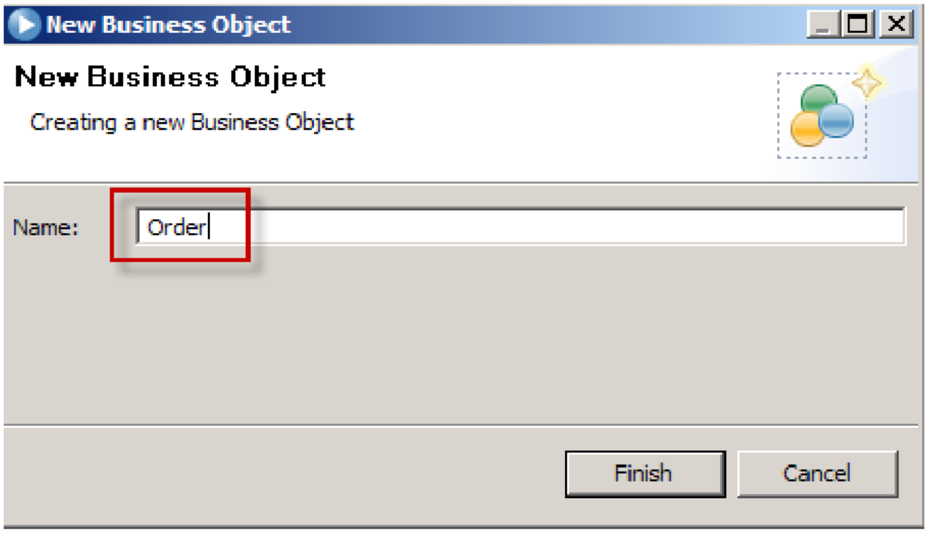


Name: order

Variable Type: String

___e. We are now going to create the **Order** data type. Call the new business object **Order** and click **Finish:**

___f.

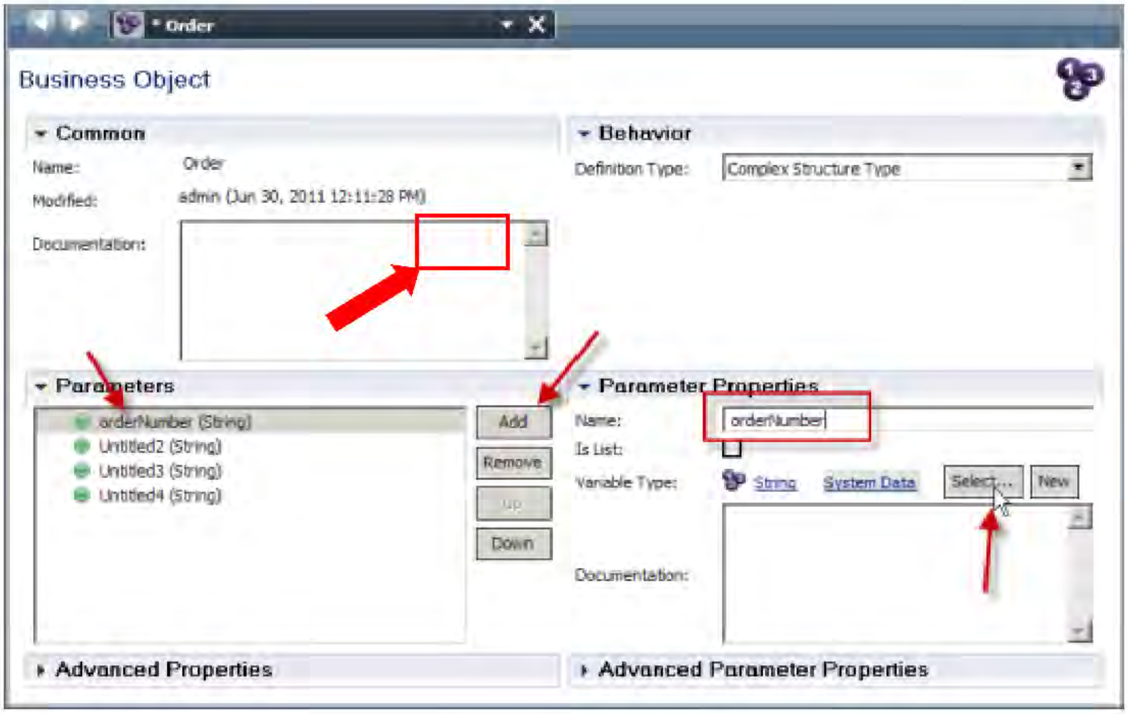


Name: Order

____ 2. Define the new variable type

___a. This step has just created a new Data Type / Variable Type / Business Object in Process Designer. When you create a new type in this way, the Business Object editor is automatically opened, allowing you to specify details for the newly created type.

___b. Add some parameters to the new variable type. Under **Parameters**, click **Add** four times. You get four parameters of type **String**. Click the first of it, and (under **Parameter Properties**) change the name to **orderNumber**:



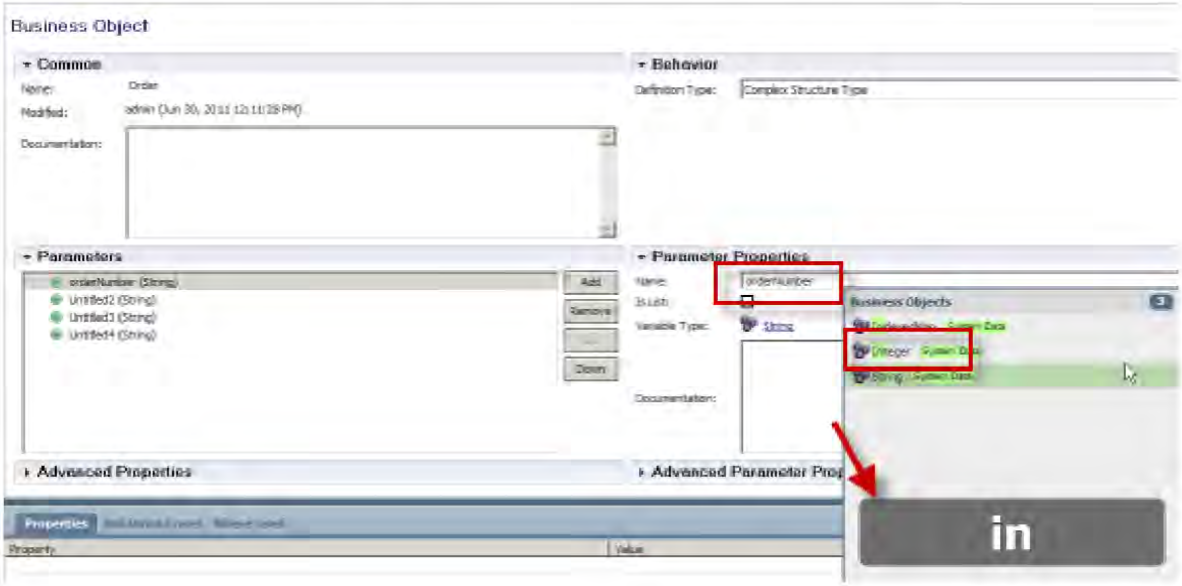
Name: Order
Modified: admin (Jun 30, 2011 12:11:28 PM)
Definition Type: Complex Structure Type

- orderNumber (String)
- Untitled2 (String)
- Untitled3 (String)
- Untitled4 (String)

Name: orderNumber
Variable Type: String System Data

___c.

___d. Click **Select…** for **Variable Type.** Start typing "IN" and then select **Integer** from the list of options – this will make **orderNumber** an Integer rather than a String:



Name: Order
Modified: admin (Jun 30, 2011 12:11:28 PM)
Definition Type: Complex Structure Type

- orderNumber (String)
- Untitled2 (String)
- Untitled3 (String)
- Untitled4 (String)

Name: orderNumber
Variable Type: String

- Integer System Data
- String System Data

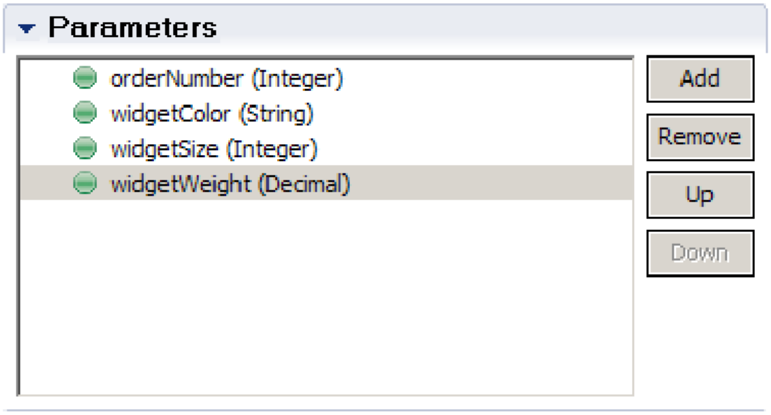
___e.

___f. Repeat the steps above to achieve the following:

  ___a. Call the second parameter **widgetColor** and leave its data type as **String**.

  ___b. Call the third parameter **widgetSize** and make it an **Integer**

  ___c. Call the fourth parameter **widgetWeight** and make it a **Decimal**.



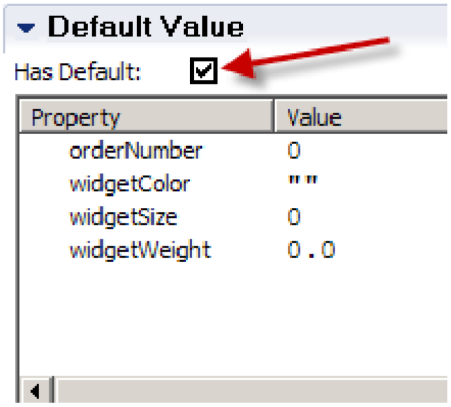
Parameters

- orderNumber (Integer)
- widgetColor (String)
- widgetSize (Integer)
- widgetWeight (Decimal)

  ___d.

___g. **Save** your work (**Ctrl-S**) and close the data type editor (click on the "x" by **Order** at the top of the pane).

___h. You should be back on the **Variables** tab in the Business Process Definition editor. **Check the Has Default** box for the **order** variable (very important!). This will ensure that the variable is initialized when we use it during playbacks:



Default Value

Has Default: ☑

Property	Value
orderNumber	0
widgetColor	""
widgetSize	0
widgetWeight	0.0

___i.

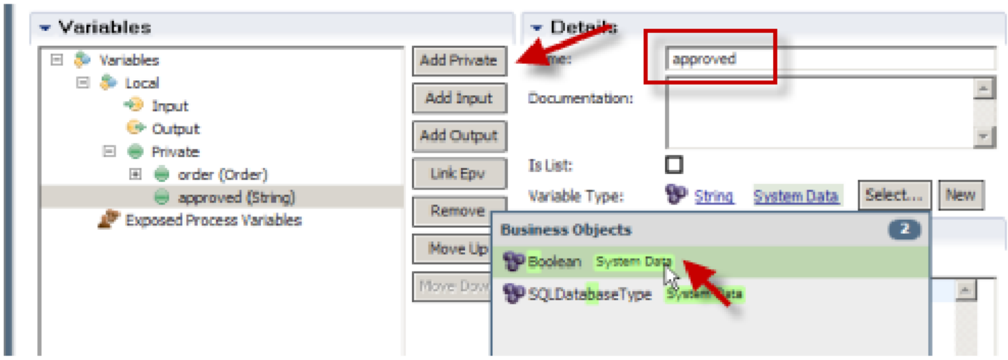
___j.

_____ 3. Create two more private variables

We now need to create a simple Boolean variable to store the approval decision, and a String variable to capture comments about the order. Note that we could have included these variables as parameters of the **order** variable, but the reason why we are keeping them separate will become clearer later on.

___a. Click **Add Private** again, and then change the name to **approved**. Click **Select…** for the **Variable Type** and type **"B"** – select **Boolean** from the list:

___b.



Name: approved

Variable Type: String System Data

___c. **Check the Has Default** checkbox for this variable too.

___d. Similarly, add a **comments** private variable. Leave the Variable Type as **String** and make sure you check the **Has Default** checkbox.

___e. You are done creating variables and data types. **Save** the changes made to the **Order Processing** BPD.

Takeaway from this section

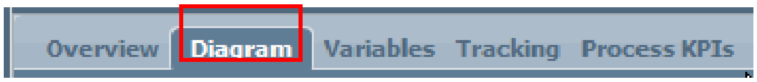
In this section we created a business object and associated it as a variable within the process. This will enable activities within the process to reference and update the variable values during execution. In the next section we will see how to create a user interface that allows users to do just that.

Part 8: Creating User Interfaces

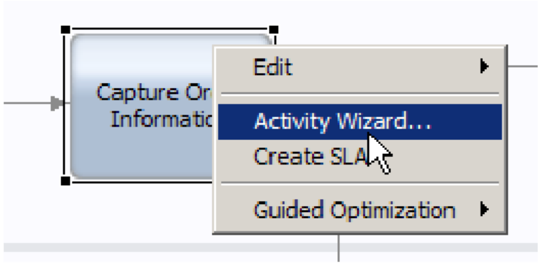
In this section, we'll take a first look at how to create user interfaces using Process Designer. In the short time we've got for this lab, the focus will be on introducing the general approach to creating interfaces in Process Designer and enabling our simple order management scenario.

____ 1. Create a user interface for Capture Order Information using the Activity Wizard

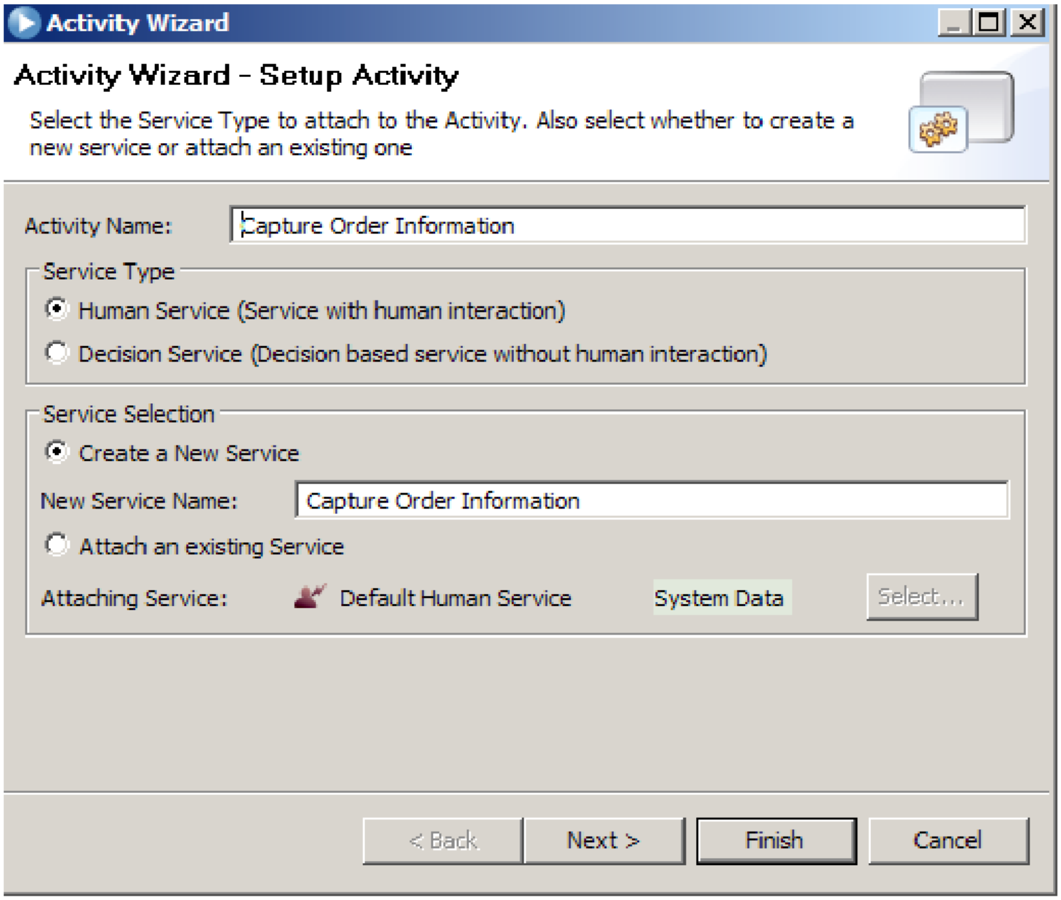
___**a.** Click on the **Diagram** tab near the top of the screen to go back to the BPMN editor.



___**b.** Right-click **Capture Order Information** and select **Activity Wizard…**



___**c.** When the **Activity Wizard – Setup Activity** wizard page appears, keep the default for Service Type, (**Human Service**), and for Service Selection (**Create a new Service**). Click **Next >**.



Activity Wizard - Setup Activity

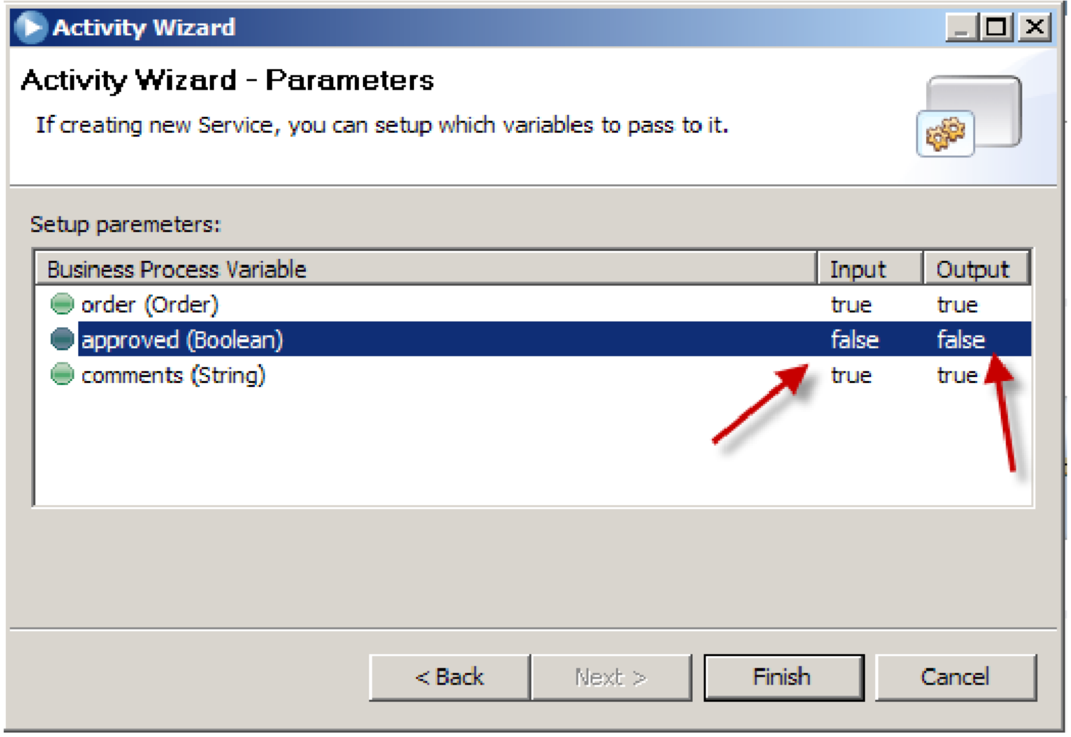
Select the Service Type to attach to the Activity. Also select whether to create a new service or attach an existing one

Activity Name: Capture Order Information

Service Type
● Human Service (Service with human interaction)
○ Decision Service (Decision based service without human interaction)

Service Selection
● Create a New Service
New Service Name: Capture Order Information
○ Attach an existing Service
Attaching Service: Default Human Service System Data

___d. At the **Activity Wizard – Parameters** page, keep the defaults for **order** and **comments** but make sure you click on both the **input** and **output** for **approved** to turn them to **false:**



Activity Wizard - Parameters

If creating new Service, you can setup which variables to pass to it.

Setup paremeters:

Business Process Variable	Input	Output
order (Order)	true	true
approved (Boolean)	false	false
comments (String)	true	true

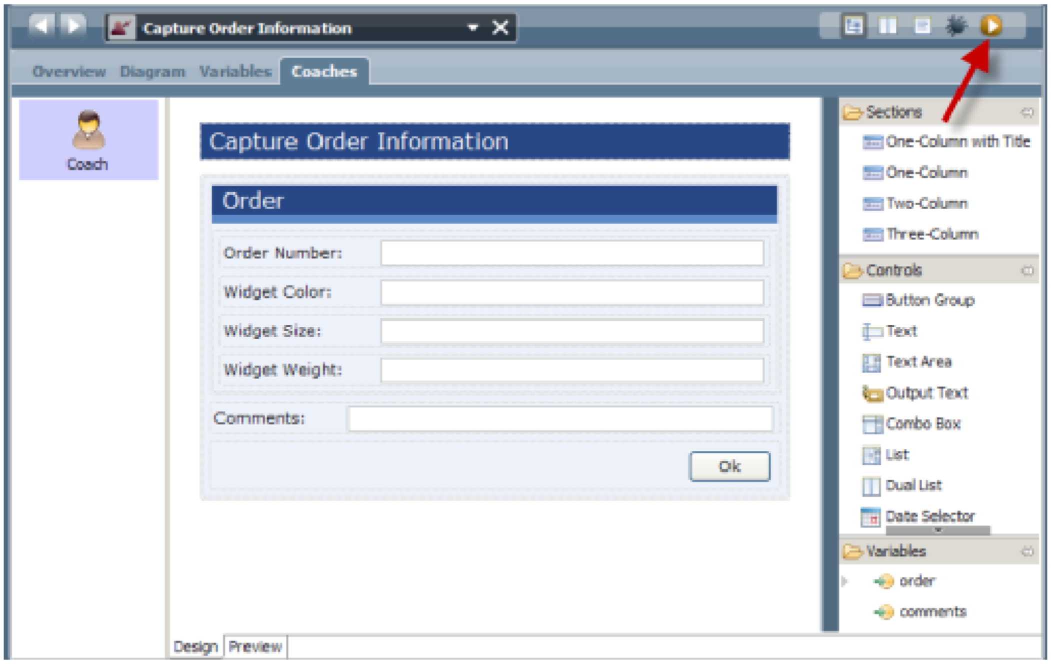
____**e.** We don't need the **approved** information to be set by the order taker. Click **Finish**. This step generates the user interface (coach) based on the **Order** data type we created a while back.

_____ 2. Run the generated Capture Order Information user interface

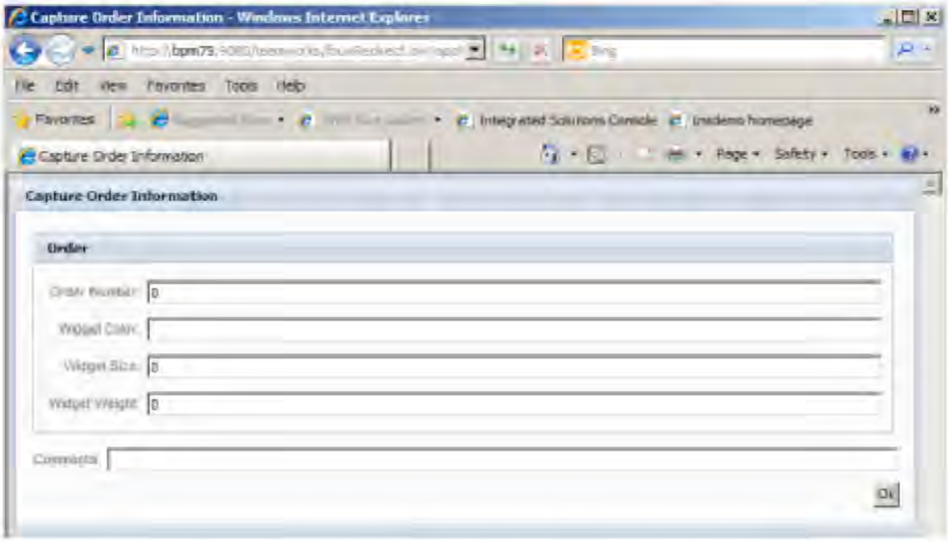
____**a.** Back in the diagram, double-click on the **Capture Order Information** activity.

____**b.** Note that the generated implementation opened up in the Coach Designer, which is used to design screens for human interaction. Double-click the **Coach** activity.

____**c.** The activity wizard went ahead and put the data elements onto the screen. Earlier you saw that we could run the process from the higher-level process (BPD), but you are not limited to always running from the higher-level process. In fact, go ahead and run this implementation by clicking **Run** ▶ in the top-right corner of the editor



___**d.** A browser window opens with the data elements that were defined for the screen. Notice that the numeric types have appropriate controls and default to zeroes. Click **OK** to complete the form.


Capture Order Information - Windows Internet Explorer
File Edit View Favorites Tools Help
Favorites
Integrated Solutions Console
Page ▾ Safety ▾ Tools ▾
Ok

Capture Order Information

Order

Order Number: 0

Widget Color:

Widget Size: 0

Widget Weight: 0

Comments

___**e.** Close the browser window after you see the message that the service has finished.

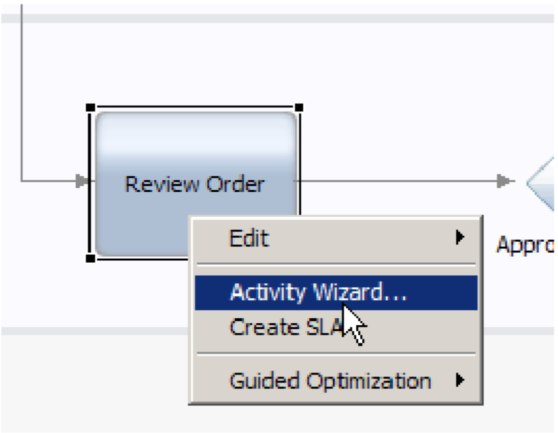
What you just experienced is the default implementation of the coach. Using the coach designer, you can customize the appearance to your liking, and immediately replay those changes to verify that you obtained what you needed. In this lab, we are not going to focus on the UI customization part. Refer to the “Process Designer – Build From Scratch Lab” for more on customizing coaches.

____ 3. Completing the Business Process Definition

Let's now complete the business process definition so that the process can be driven from beginning to end.

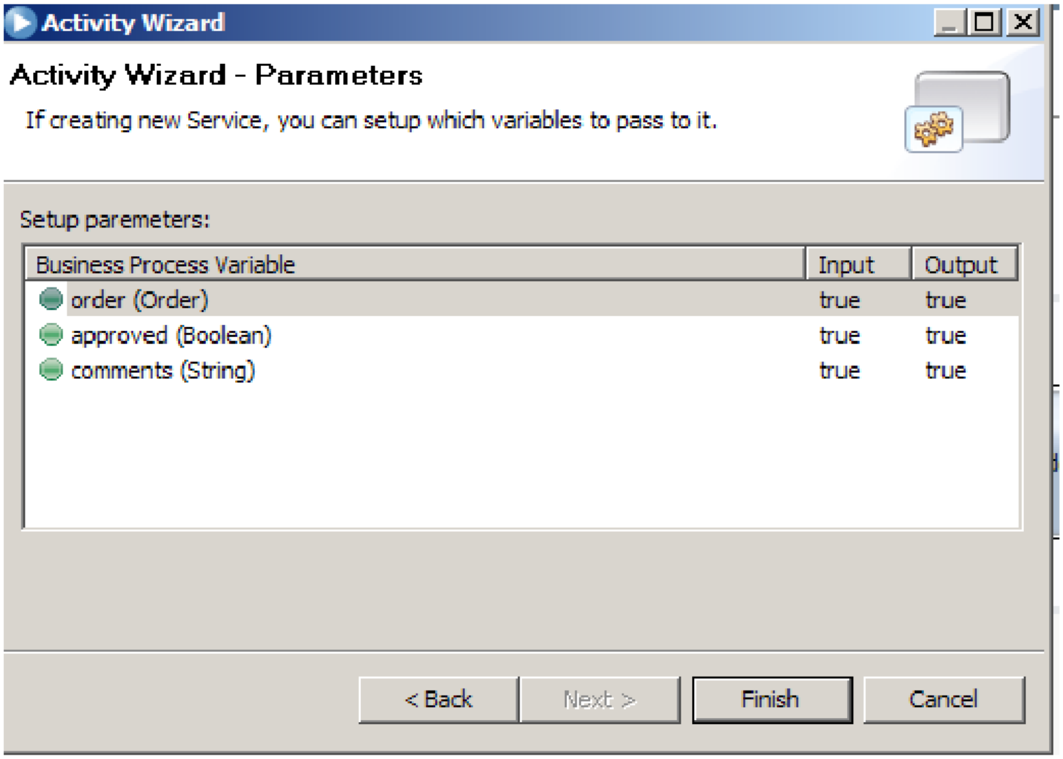
___**a.** Close the coach editor.

___**b.** Let's now generate the implementation for the **Approve Order** activity. Right click on it, and select **Activity Wizard…**



___**c.**

___**d.** Click **Next** on the subsequent screen, and then accept all the defaults for inputs and outputs (since we need all that information on the approval screen):



Activity Wizard - Parameters

If creating new Service, you can setup which variables to pass to it.

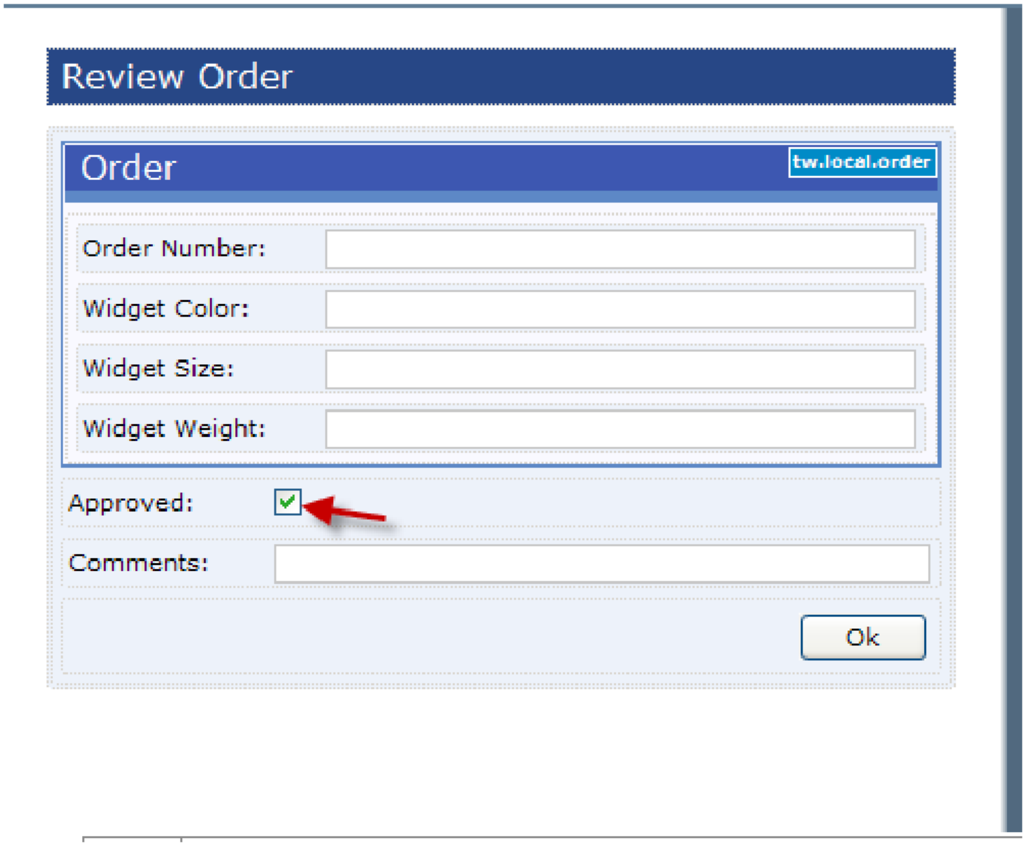
Setup paremeters:

Business Process Variable	Input	Output
order (Order)	true	true
approved (Boolean)	true	true
comments (String)	true	true

___**e.**

___f. Click **Finish.**

___g. Double click **Approve Order** and then double click **Coach**. The coach designer opens up showing the new screen. Notice the presence of the **Approved** checkbox:



Review Order

Order

Order Number:

Widget Color:

Widget Size:

Widget Weight:

Approved: ☑

Comments:

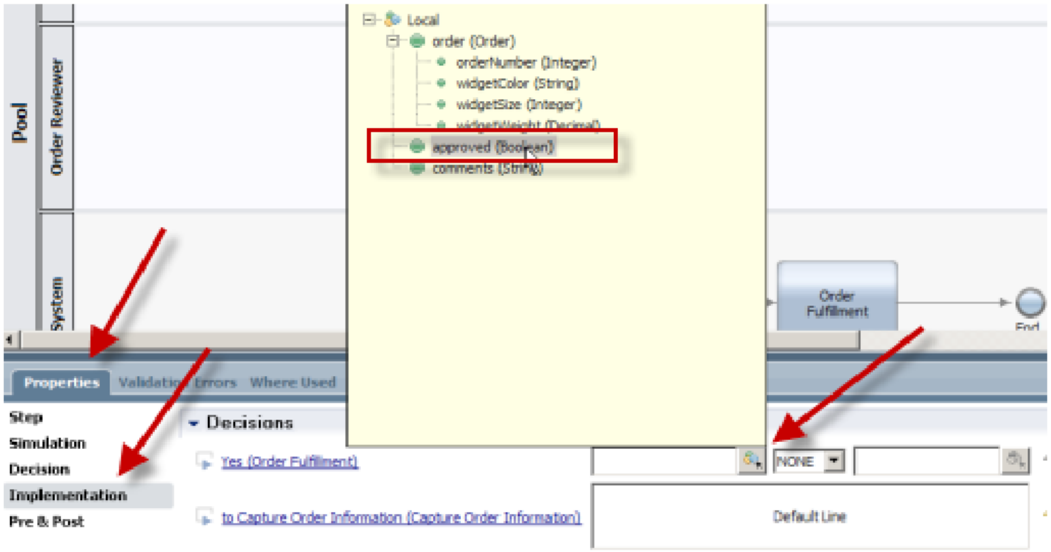
___h.

___i. You can test the coach as we did earlier if you wish. After that, **close** the coach editor.

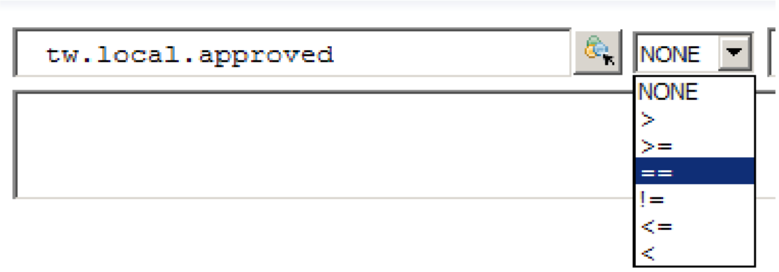
___j. Select the **Approved?** decision gateway on the diagram. We need to define the logic that determines the process flow after the approval human task has been completed.

___k. In the **Properties** tab of the lower pane, click on the **Implementation** sub-tab, and then click the selection icon by the field on the **Yes (Order Fulfillment)** line . Select the **approved** variable from the pop-up list:

___l.

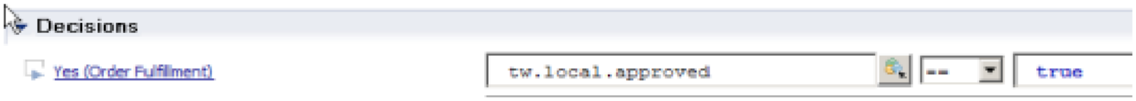


___m. The first element of the logical expression will be populated with **tw.local.approved**. Now, click on the pull-down arrow by the middle field in the logical expression, and select "==":



___n.

___o. Finally type **true** on the third field. The final logical expression should look as follows:



___p.

___q. We have just specified that when the variable **approved** is set to true, the process should go the **Order Fulfillment** activity in the System lane. **Save** your work.

____ 4. Test the process end-to-end

You can now test the process end-to-end using, for example, the Inspector.

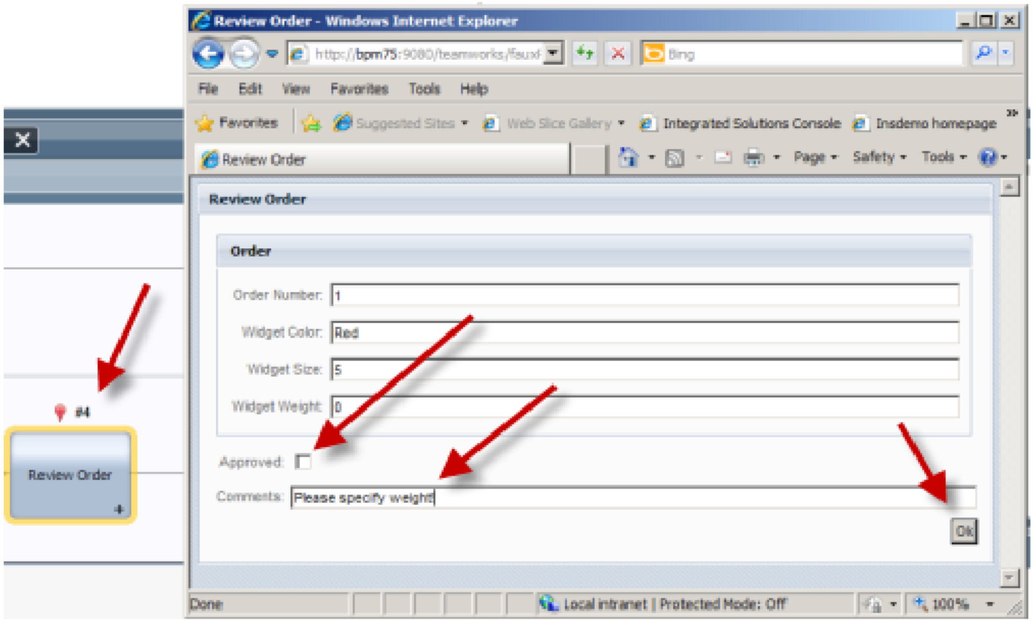
___a. On the BPD editor, click the **Play** button again to kick off a new version of the process.

___b. Switch to the Inspector view and claim the first task (as we did earlier).

___c. Complete the form in the browser with some data, and click **OK**. Close the browser.

___d. In the Inspector, hit **Refresh**. The process should now sit on the **Approve Order** task. Claim that task too.

___e. The browser opens up, and you should see the data that you inputted when you completed the first task. Add a comment and **do not check** the **Approved** checkbox:


Review Order - Windows Internet Explorer
http://bpm75:9080/teamworks/fauxl
Bing
File Edit View Favorites Tools Help
Favorites
Suggested Sites
Web Slice Gallery
Integrated Solutions Console
Insdemo homepage
Page
Safety
Tools
#4
Review Order
Done
Local intranet | Protected Mode: Off
100%

Review Order

Order

Order Number: 1

Widget Color: Red

Widget Size: 5

Widget Weight: 0

Approved: ☐

Comments: Please specify weight

Ok

___f.

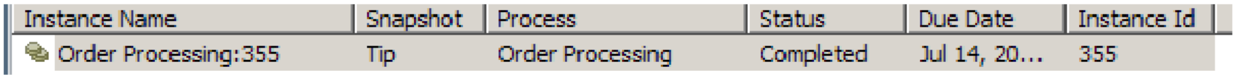
___g. Click **OK.** Refresh the Inspector view, you should see that the process is back to **Capture Order Information**.

___h. Claim that task again – you should now see the **Comments** that were specified by the reviewer. Click **OK** and then hit refresh again.

___i. Now, claim the **Review Order** task. This time **check** the **Approved** checkbox, and click **OK.**

___j. The process should complete (you should see the process instance change to the **Completed** status after you refresh):

___k.



Instance Name	Snapshot	Process	Status	Due Date	Instance Id
Order Processing:355	Tip	Order Processing	Completed	Jul 14, 20…	355

You now have a process that runs end-to-end, but we haven't implemented the integration logic.

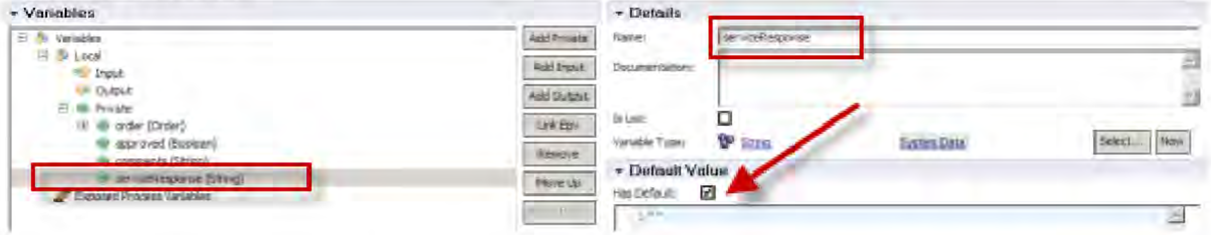
___l. This is going to be our next step before we leave the Process Designer for a while and get to work in Integration Designer.

____ 5. Define an Advanced Integration Service for Order Fulfillment

We now want to complete the implementation of the process by calling out to an advanced integration service, which we are going to develop in the second part of this end-to-end lab.

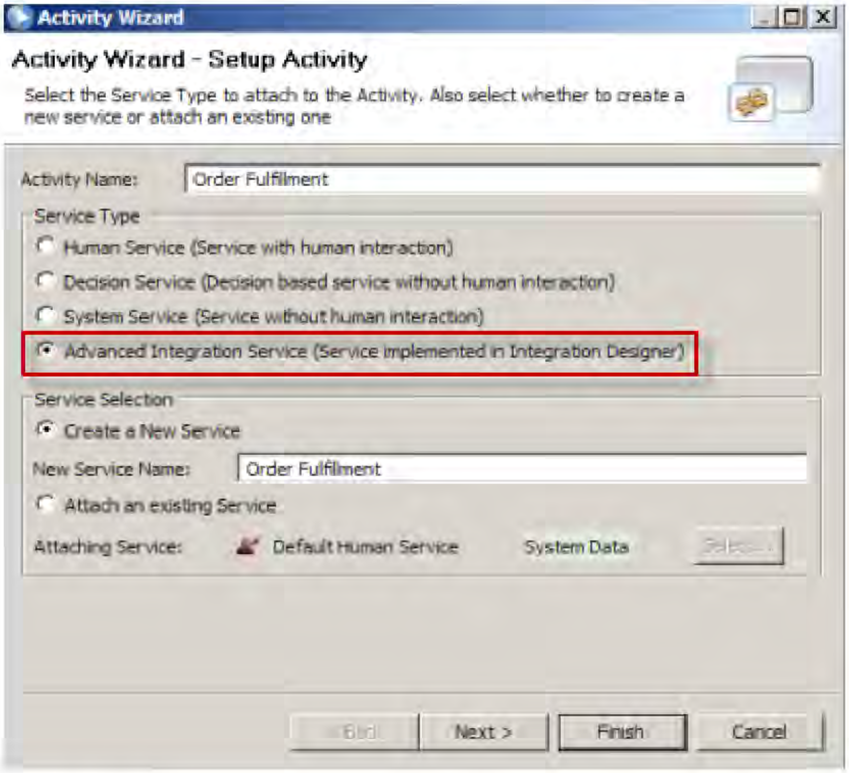
___a. Switch back to the BPD Designer view, if you are still in the Inspector view.

___b. Switch to the **Variables** tab and add a new private variable called **serviceResponse**. Leave it a **String** and don't forget to check **Has Default.** This variable will host the response of the integration service:



___c. Switch back to the **Diagram** tab. Right-click the **Order Fulfillment** activity in the **System** lane and select **Activity Wizard…**

___d. This time, we are going to pick **Advanced Integration Service** from the list:



Select the Service Type to attach to the Activity. Also select whether to create a new service or attach an existing one

Activity Name: Order Fulfillment

Service Type
○ Human Service (Service with human interaction)
○ Decision Service (Decision based service without human interaction)
○ System Service (Service without human interaction)
● Advanced Integration Service (Service implemented in Integration Designer)

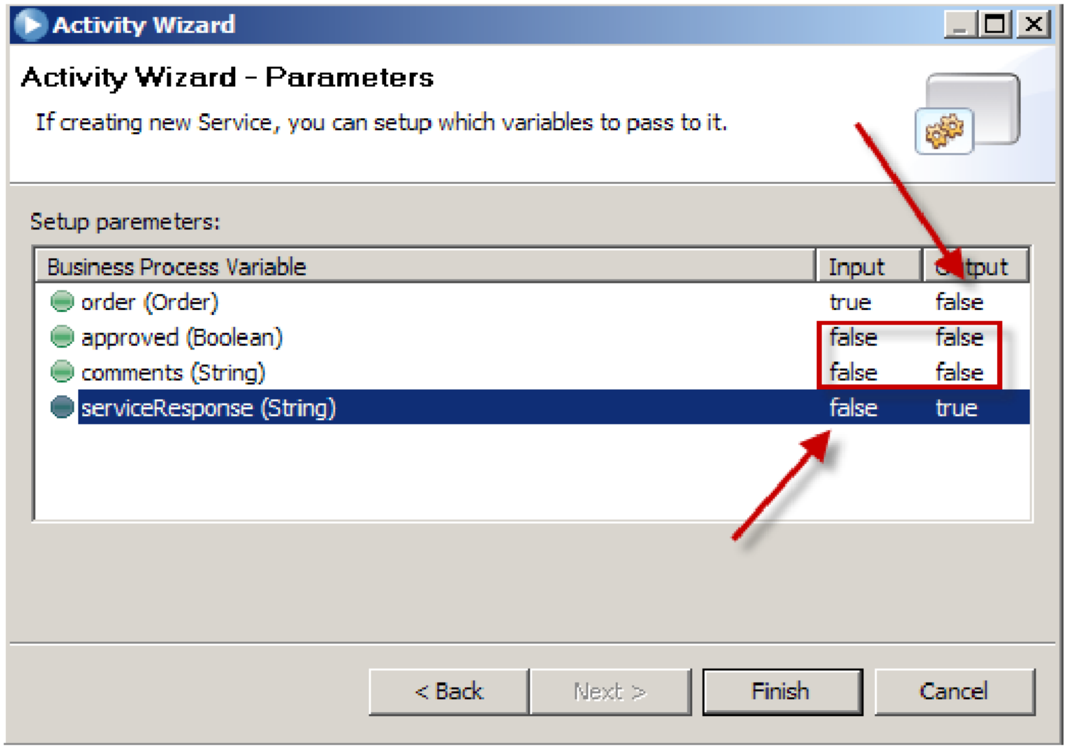
Service Selection
● Create a New Service
New Service Name: Order Fulfillment
○ Attach an existing Service
Attaching Service: Default Human Service System Data Select...

___e.

___f. Click **Next**.

___g. Ensure that you turn to **false** the inputs and outputs for **comments** and **approved**. That information isn't needed by the integration service, that only cares about the order, and about communicating a success or failure response back to the process. Now it should become clear why we didn't include **comments** and **approved** in the **Order** data type.

___h. Also, change the **Output** of **order** to **false**, and the **Input** of **serviceResponse** to **false,** as shown below:



Activity Wizard - Parameters

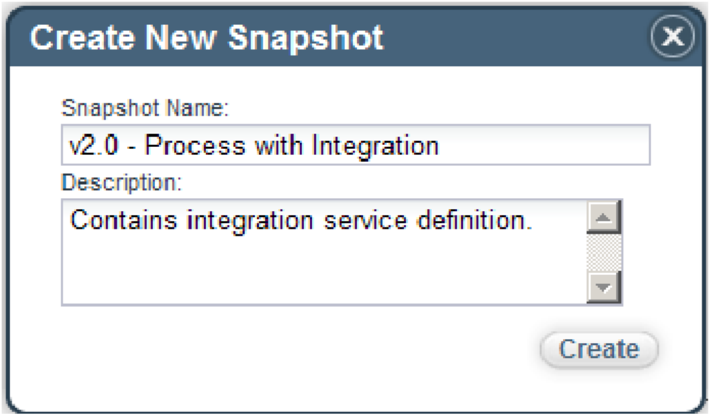
If creating new Service, you can setup which variables to pass to it.

Setup paremeters:

Business Process Variable	Input	Output
order (Order)	true	false
approved (Boolean)	false	false
comments (String)	false	false
serviceResponse (String)	false	true

___i. Click **Finish** and **make sure you save your work** (Ctrl-S).

___j. Take a **snapshot** of the process and call it **v2.0 – Process with Integration**:



Snapshot Name: v2.0 - Process with Integration

Description: Contains integration service definition.

___k.

Now we have a BPD that exposes an advanced integration service. In the second part of this lab, we are going to complete the implementation in Integration Designer, and then come back to Process Designer and test the end-to-end implementation.

CONGRATULATIONS!

You have completed this first part of the build from scratch hands-on lab.